webparts 360° AppStudio

Building Your Project Management Office

SharePoint

SYNESIS
INTERNATIONAL, INC.

For support or information from our support center, call

864-288-1550

About Webparts360

Webparts360 AppStudio is a powerful and easy to use application development toolkit that empowers business users and developers to assemble their own applications by configuring only 3 web parts. These web parts provide the necessary components required for input, process and output:

- SmartList, an advanced data entry forms with validations, child lists, lookups and actions,
- SmartView, reporting widgets with animated charts, data grids, Gantt charts, calendars
- and SmartMenu, contextual navigation with role based menu item security

Essentially, everything you need to build comprehensive end-to-end applications.

Webparts360 core underlying framework extends out-of-the box SharePoint to support the demands of an enterprise solutions; including:

- Extend SharePoint custom list to be used as a SQL table; including relational T-SQL queries
- Work seamlessly between SharePoint data with back-end SQL data
- Full audit log for transaction tracking and audit trails

Webparts360 AppStudio delivers all these functionalities in an integrated web development environment that allows you to manage all the artifacts of an application from the convenience of a single tool; including:

- Visual design tools to build the entity relationship (ER) model of the database and the process model of a transaction during data entry
- Easy access to all SharePoint resources; custom list, document libraries, images, pages as well as to external data sources or web services
- Enterprise solution lifecycle management features such as web parts version control with check-in/check-out, transaction audit trail with process map
- Solution package and deploy function with password protection

Today, webparts360 has been successfully used by large enterprises such as Amway, Coca Cola, Daikin, MAS, Prudential and etc… to power mission critical business processes such as CRM, project management, procurement, service management, employee self-service, performance dashboards and other business process automation.

For more information, see http://www.webparts360.us

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Introducing Webparts360

- **Webparts360**: a Microsoft certified partner since 2001
- Webparts360 **AppStudio**: our flagship product, a game-changing tool which will revolutionize the way you build applications in SharePoint
- Webparts360 applications have been supporting all SharePoint versions since 2007: providing a single click upgrade path to SP2010 and now also SP2013.

What does AppStudio do?

- Enables you to build applications in SharePoint with NO coding
- Provides an intuitive visual design tool
- Manages all essential resources and functions in your application (input, workflow, navigation, reports)
- Transforms SharePoint into a transactional, relational and contextual application development platform
- Package and deploy solutions to other servers

How can I build an application without code?

- Assemble your solution by connecting configurable web parts
- Web parts are stored in a central repository
- They can be saved as templates for future rapid deployment

Similar to pre-fabricated building components, we provide essential building blocks such as data entry forms, workflow, data grids, charts, and navigation. We make it possible to build many different applications using the same common web parts. This is the magic of Webparts360.

Building collaborative web applications is as easy as creating a spreadsheet!

Figure 1 – The Webparts360 Advantage

Some of our clients include:

- Amway
- Coca Cola
- Prudential
- MISC
- Daikin
- MDEC
- Barrick Gold
- Malaysian Airlines
- Government of Brunei
- NT State Government
- University of Nottingham
- Georgia Tech University

What if your business users could be empowered to build their own solutions? Imagine the possibilities, if the same executive who created project budgets in Microsoft Excel also created and built the budget approval system. This guide will show how these possibilities can be achieved.

Project Expense Tracking Solution Overview

This step-by-step guide will walk you through the process of building a complete project expense tracking solution. The main objective of this system is to help project managers to keep their projects within budget.

This chapter explains what we will accomplish, and shows how the solution will look.

This system is designed to assist project managers to manage all their projects so that they can:

- Have visibility over the progress of all projects
- Approve expenses items for each project
- Keep track of project budget versus actual
- Provide repository for project documentations
- Assign and track tasks to project team members
- Approve new projects (project sponsor)

The solution will include these features:

- **Project Portfolio Dashboard** (summary overview of all projects)
- **Project Workspace** (details and individual expenses for one project)
- **New Expense Item Request** (employees fill out and submit this form)
- **Project Expense Approval Dashboard** (manager picks from a list of requests)
- **Expense Approval Form** (manager views details here, then approves/rejects)
- **Workflow Details** (audit trail showing each stage in the approval process)
- **Bar Chart: Expenses by Project** (track actual vs. budgeted expenses)
- **Application Security** (some tabs are visible to managers only)

Project Portfolio Dashboard

The Project Portfolio Dashboard on Home tab enables project managers and team members to conveniently access a summary of their projects. Each project has a manager who approves expenses. Clicking a project name will drill down to show details and expenses for this project.

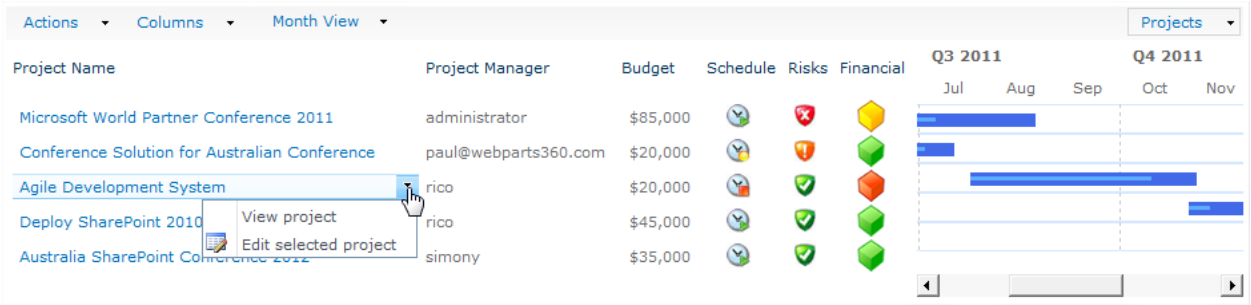


Figure 2 – Project Portfolio Dashboard

Project Workspace

The Project Workspace shows details and individual expense requests for one project. To display this screen, click a project name on the Project Portfolio Dashboard.

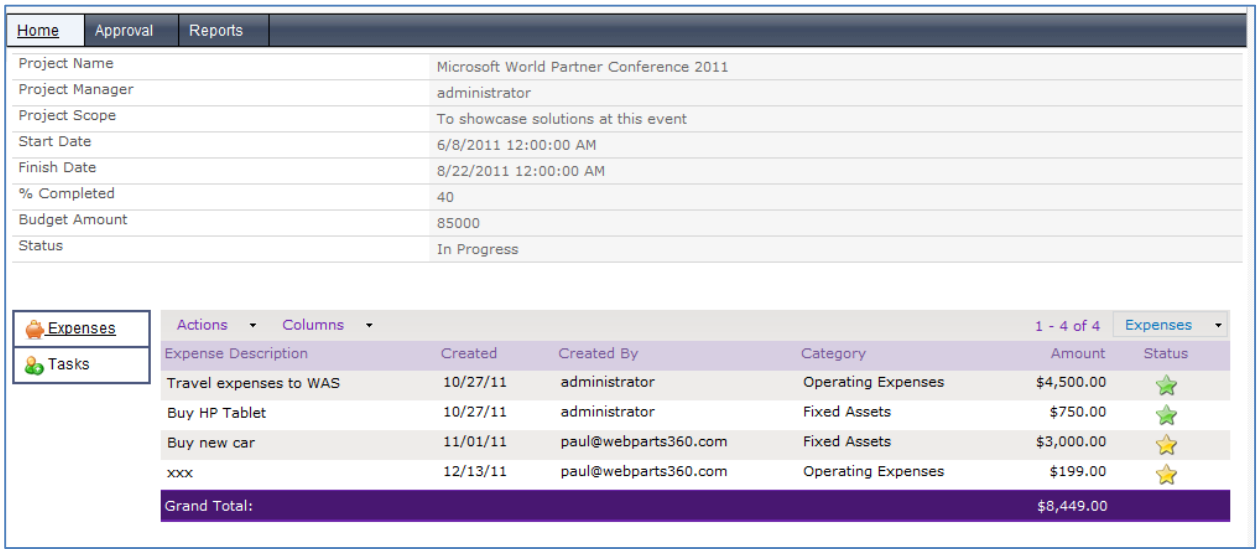


Figure 3 – Project Workspace Showing Details & Expense Items

New Expense Item Request

To submit a new item, click the **Actions** dropdown on the Project Workspace, then click **Create new expenses** and fill in the form. The **Approved By** field is locked; it defaults to the name of the project manager for the project you select.

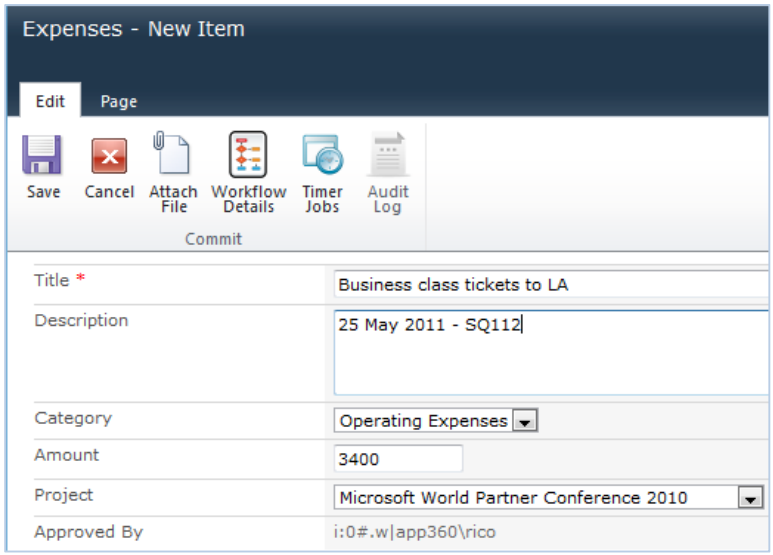


Figure 4 – New Expense Item Request

Project Expense Approval Dashboard

Once you submit an expense claim request, it appears on the project manager's approval dashboard.

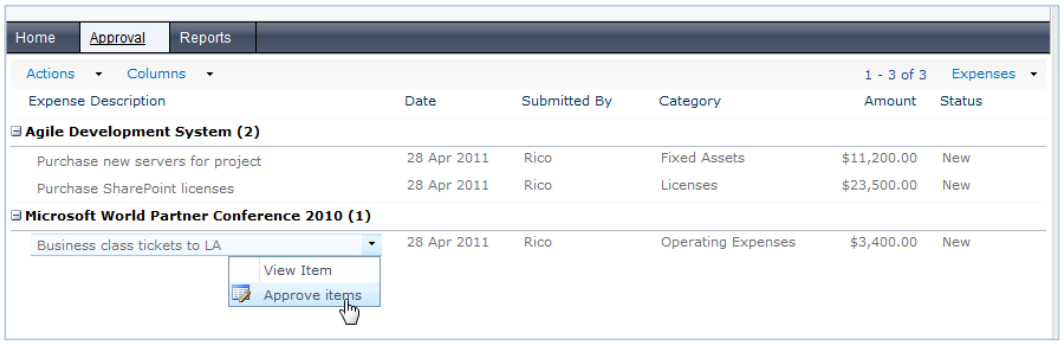


Figure 5 – Project Expense Approval Dashboard

The manager can click to approve or reject any expense claim. This displays the expense approval form.

Expense Approval Form

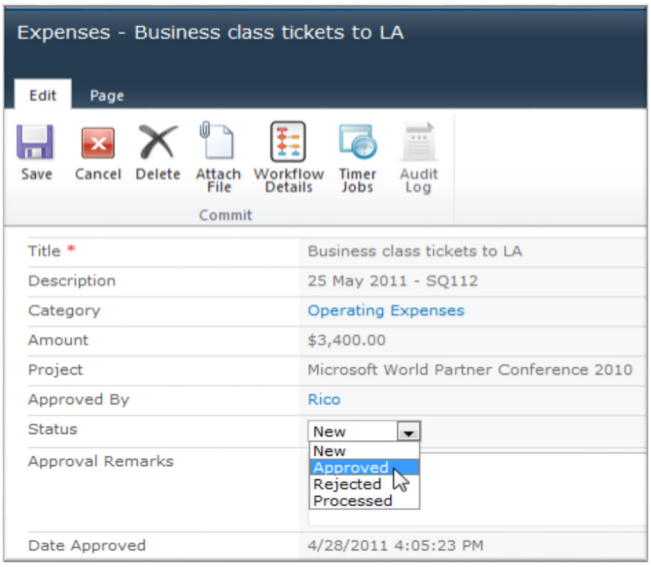
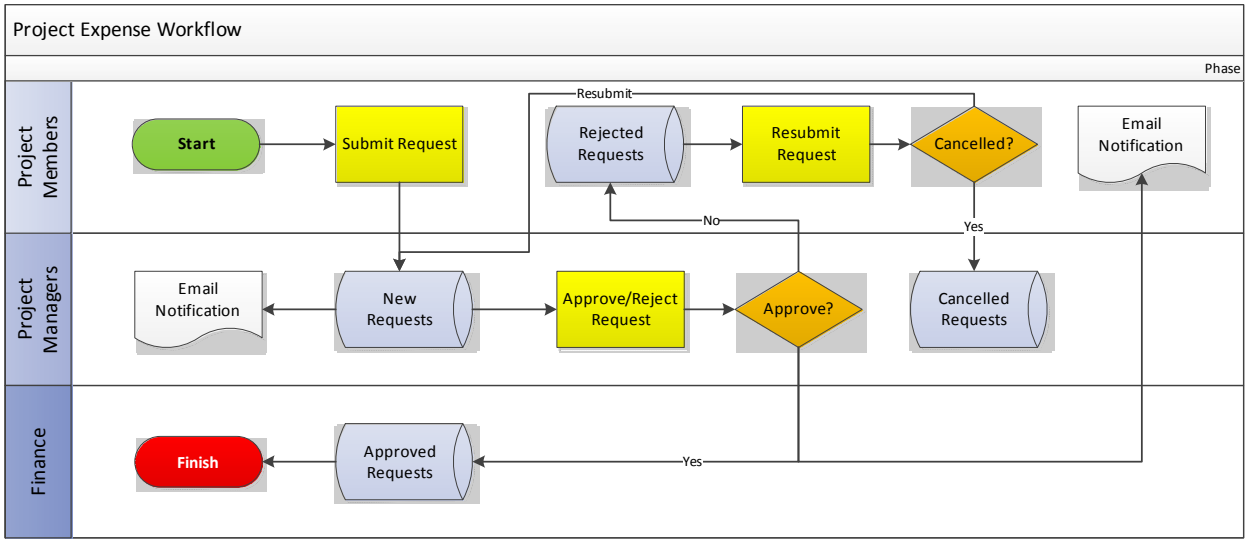


Figure 6 – Expense Approval Form

All fields entered by the employee are locked. Only the project manager can approve or reject the request, by clicking the **Status** dropdown. The system updates the **Date Approved** when the manager approves. If rejected, this request is sent back to the employee.

Workflow Details

The following diagram shows the approval workflow for project expense items between the project members, project manager and finance department.



At any point, the user can click the workflow details to see the animated audit trail. This shows the steps and details at each stage of the approval process and the person who make the action at each point.

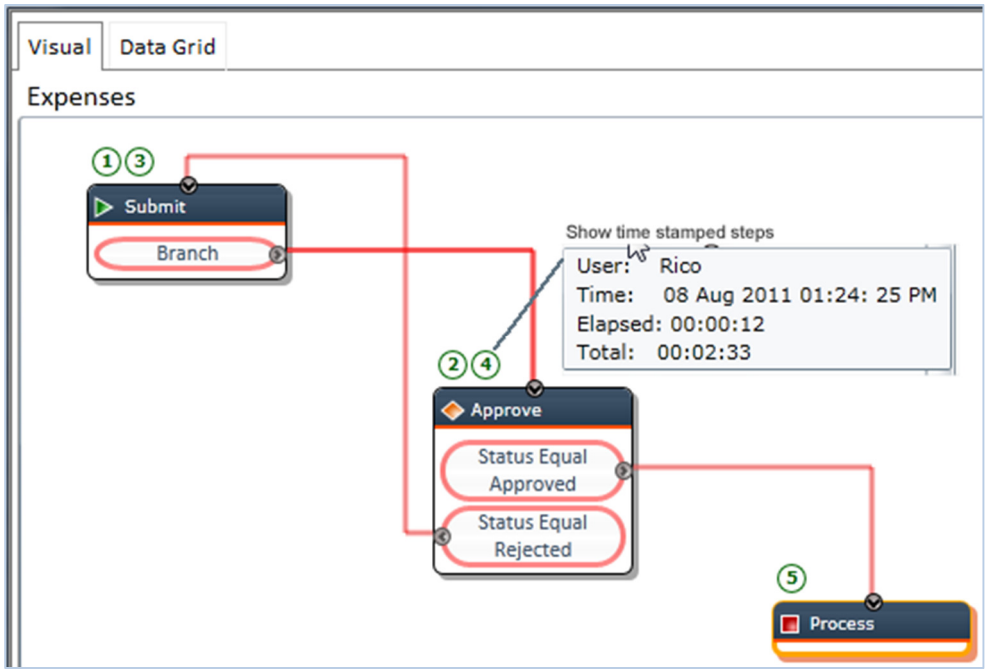


Figure 7 – Workflow Details

Bar Chart: Expenses by Project

To assist project managers to make informed decision, we will create a bar chart that shows the actual expenses spent versus the budgeted amount on each project. The manager can click any column on the chart to drill down and see details.

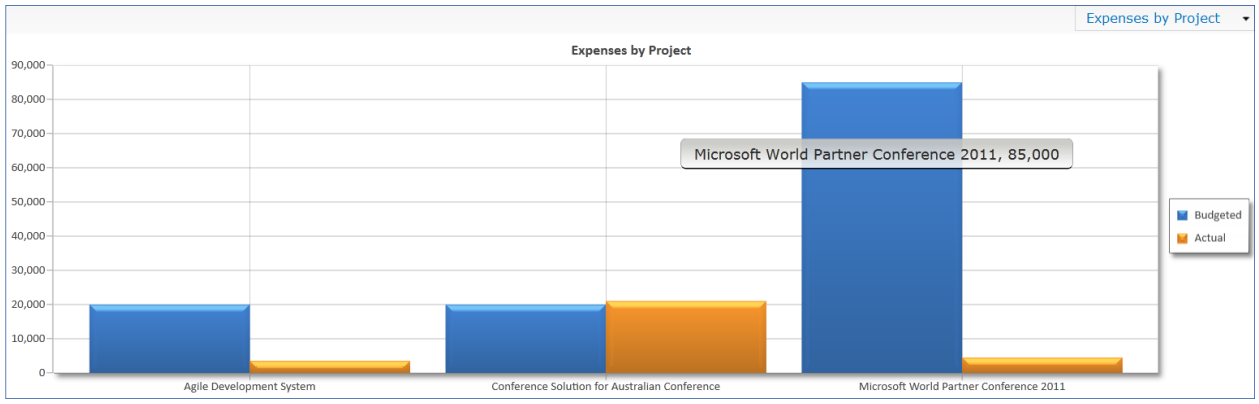


Figure 8 – Bar Chart: Expenses by Project

Please note that in order to do this report you will need to join the project table with the expense table.

Application Security

All project team members have permission to view the **Home** tab. In addition, the project manager has security access to view the **Approvals** tab and **Reports** tab.

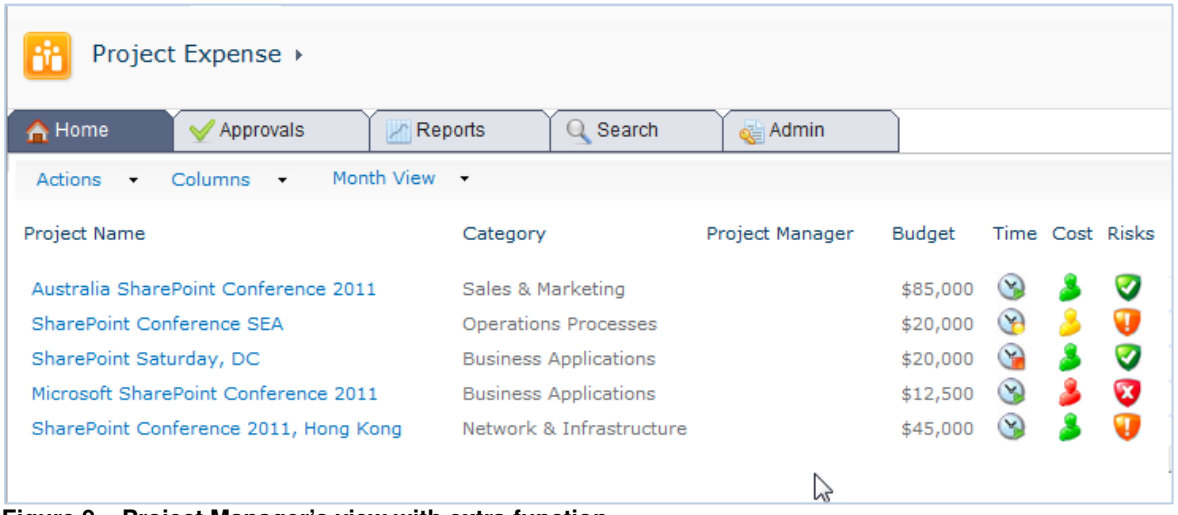


Figure 9 – Project Manager's view with extra function

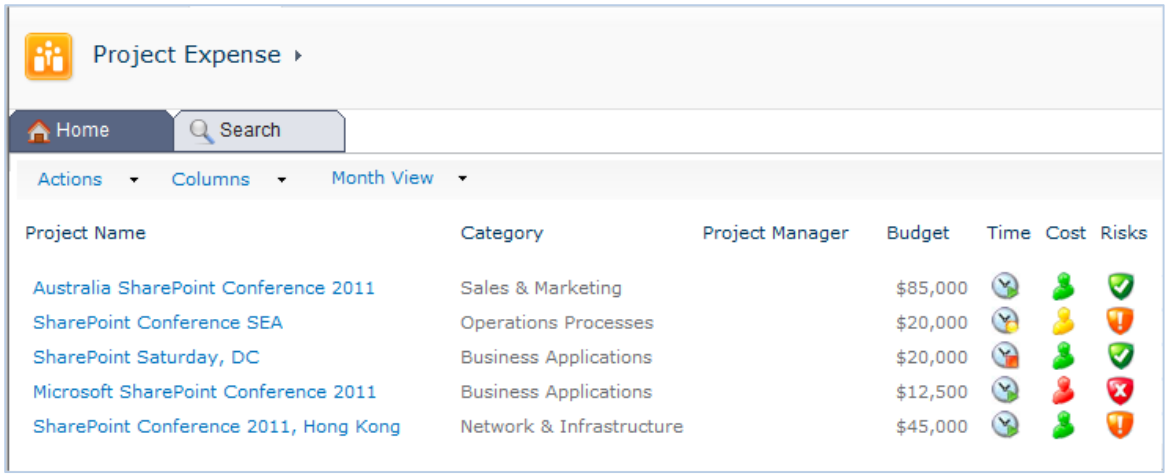


Figure 10 – Project Team view with limited access

As with all projects, you will also need to document the following:

- Database entities relationships
- Process workflows
- Site Maps
- Logical system organization

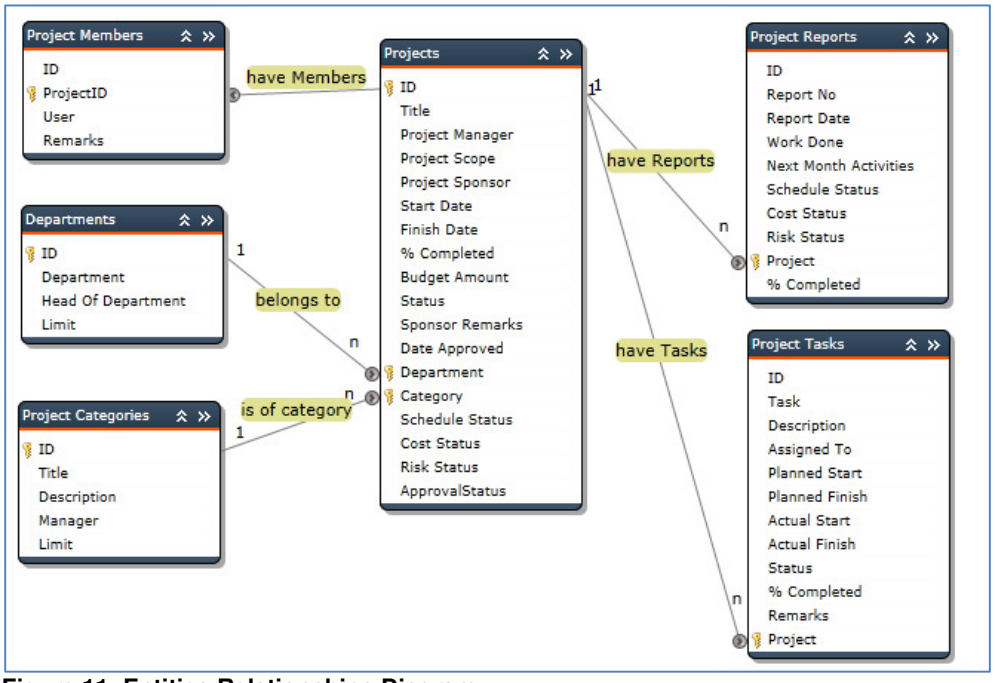


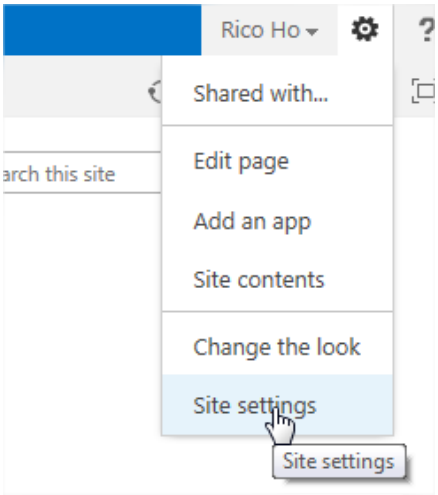
Figure 11: Entities Relationships Diagram

Now that we understand how the application should work, let's start building our project expense tracking solution.

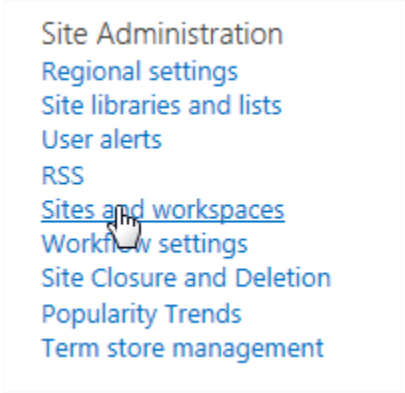
Creating the solution

We begin the step-by-step process of building a complete project expense tracking solution by creating a new **site** to hold the application. We will use a standard site predefined site **template** to save time in recreating the lists. Each table in the system is already defined in this template.

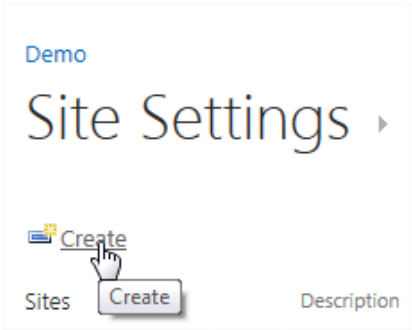
Creating and Naming a Site



1. Click **Site Actions** at the top left

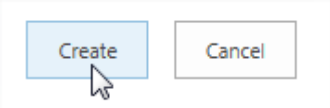


2. Click on Sites and Workspaces



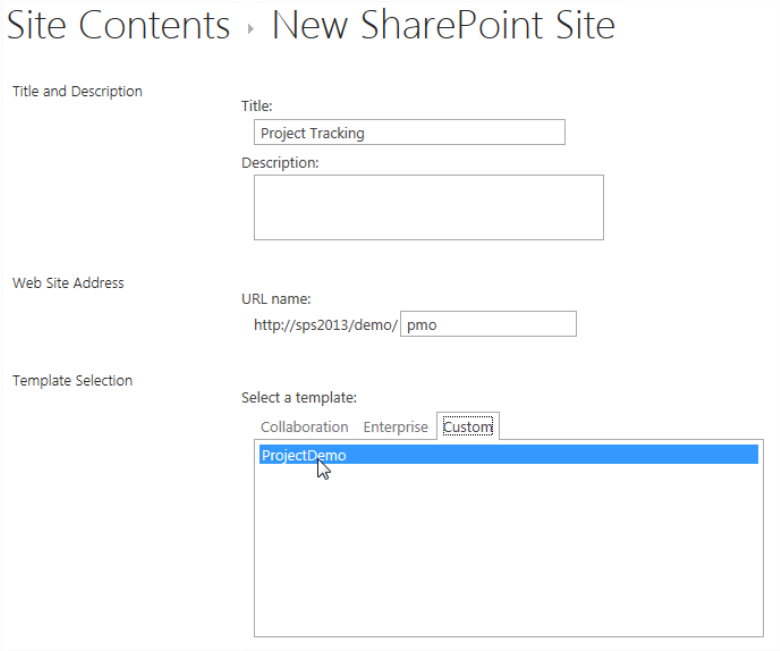
3. Click on Create

Enter the site title, description and the url name.
Under the template selection custom tab, select ProjectDemo.



Press “Create” to create the new solution site.

Upon creation, the system will show you the newly created sub site.



.

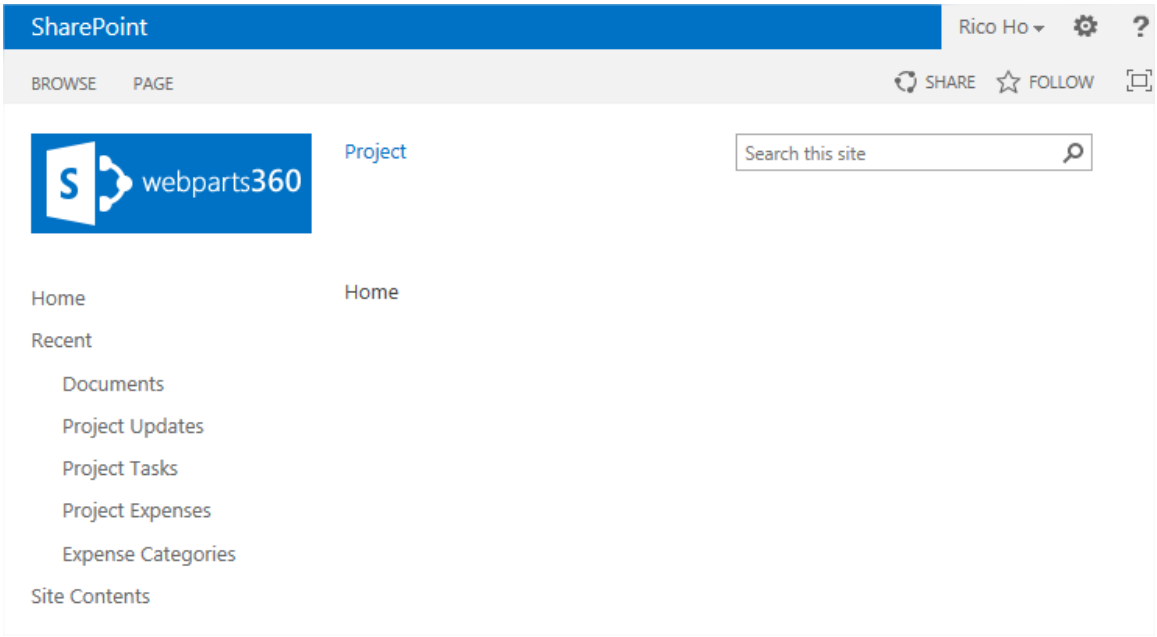


Figure 12 – New Site

You can use *any* name you like, just use the *same* name on all screens. We used Project Tracking because that is descriptive.

When your new site is created, before you make any changes, it appears as the default SharePoint view. At this point, you have the basic ability to manage contents.

If you click the **Expenses** list, you will see rows and columns of expense item data. If you click **Add new item**, you will see the standard SharePoint data entry form.

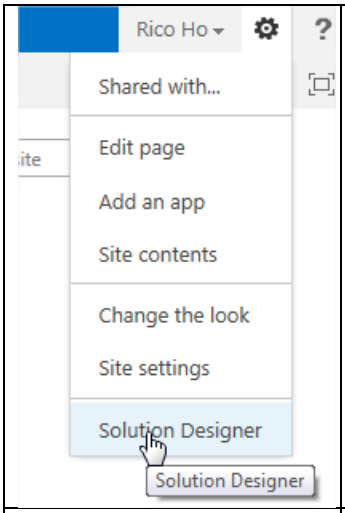
SharePoint “out of the box” does not allow you to control which users can see which columns. All data is visible to everyone. Some columns are only appropriate at certain points during data entry.

Webparts360 provides a **SmartList**, which gives you control over each column throughout the life cycle of the transaction.

Introducing Webparts360 AppStudio

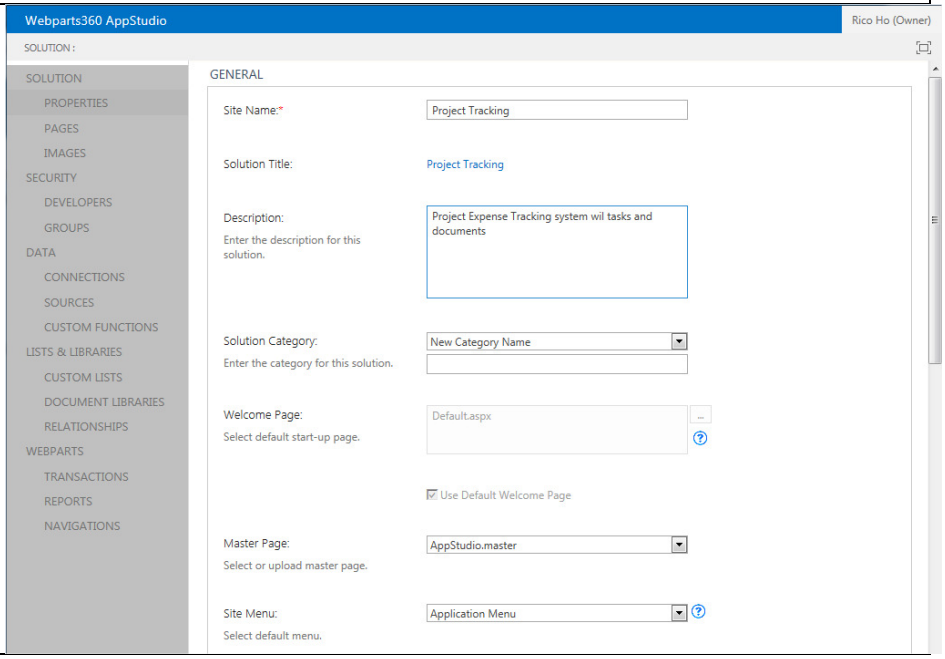
Webparts360 provides you with a design console to develop your solution:

1. Click **Site Actions**
2. Click **Webparts360 AppStudio**
3. This displays the AppStudio Design Console



1. Click on the Site Action Icon ( )
2. The click on the Solution Designer

Fill up the project description.
You can assign a category to the solution or to create a new one. This category will help you to organize your solutions within the server.
You can also select a master page that you wish to use for this solution.



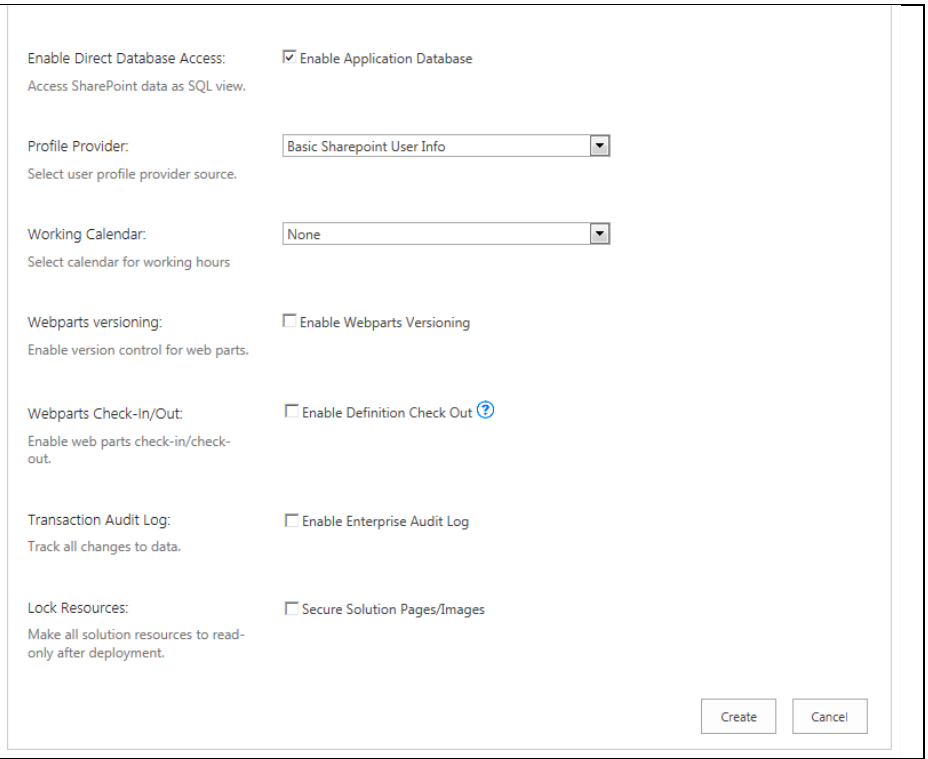
These are the other settings for your solution.

Turn off versioning only after you have complete building a solution, otherwise it will be tedious as the system will track all the changes that you make to the system.

Check-in/out is useful when working as a large team.

The transaction audit creates a log file that tracks all accesses to any lists within the solution.

Press “create” to build your solution.



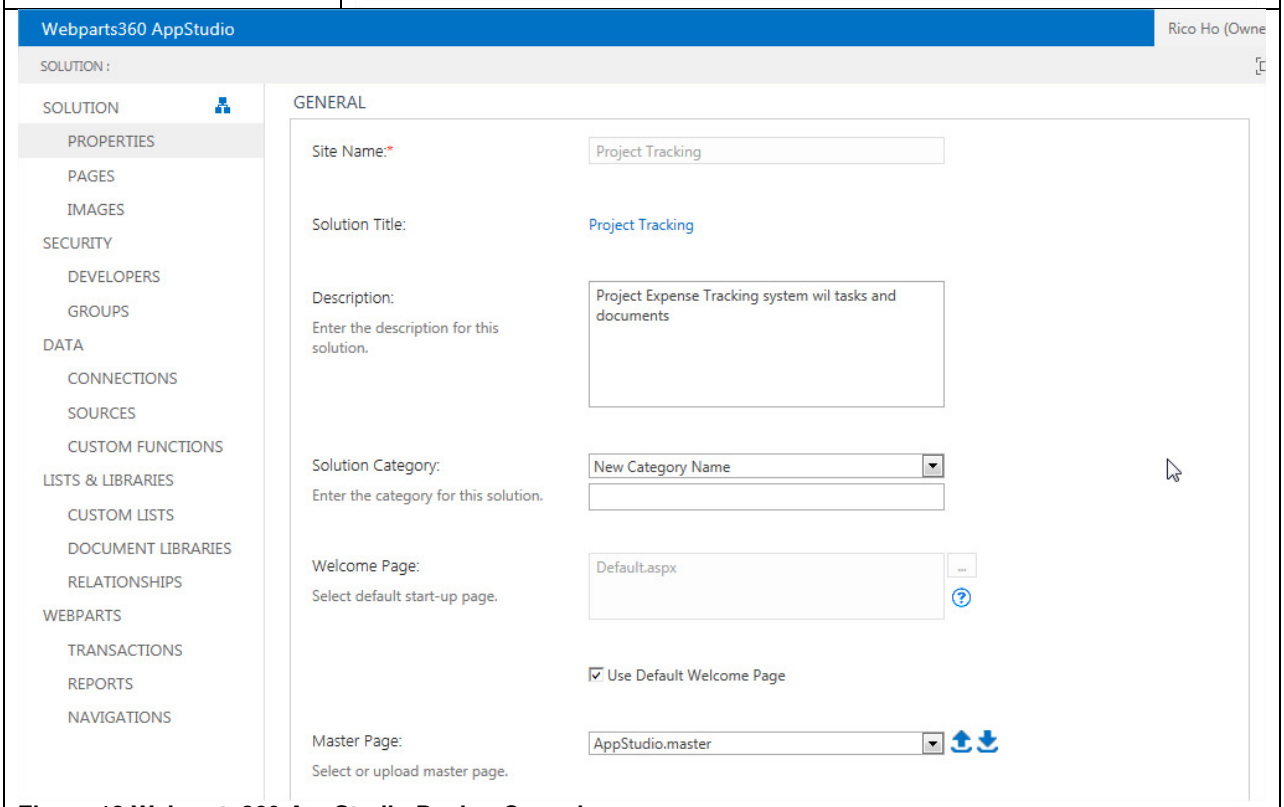


Figure 13 Webparts360 AppStudio Design Console

Figure 14 – Webparts360 AppStudio Design Console

Creating a New Page

Webparts360 AppStudio allows you to manage the pages (and all resources).

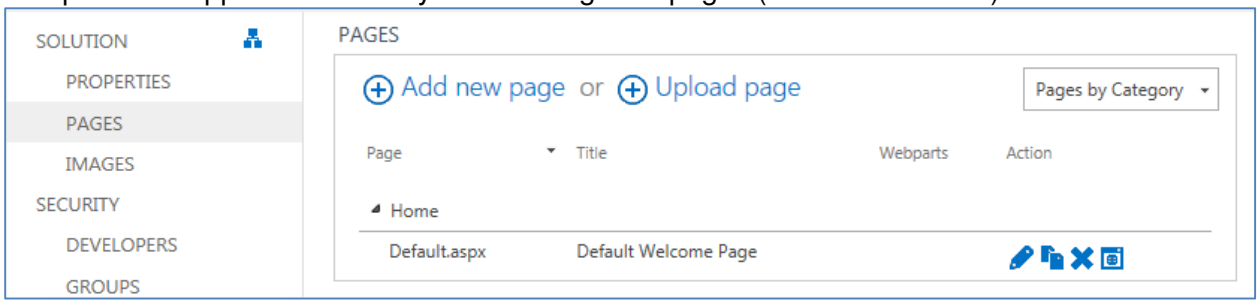


Figure 15 – Creating a New Page

1. Click **Pages** on the left sidebar
2. Click **Add New Page** (blue link)
3. Enter **File Name**: ProjectWorkspace (no blanks)
4. Enter **Title**: Project Workspace (insert a space)
5. Add **Description**: This page has workspace details.
6. Select **Page Template**: Header, Footer, 3 columns.
7. Click the **Create** button.

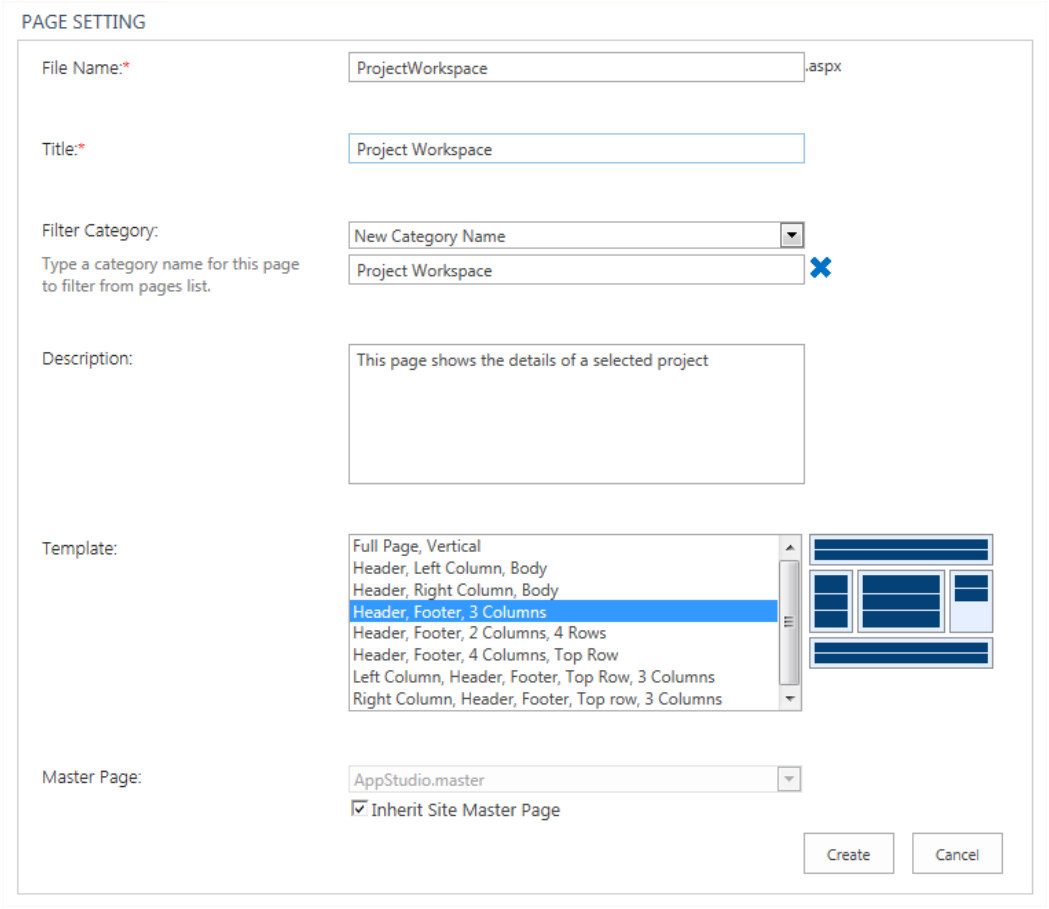


Figure 16 – Configuring Page Settings

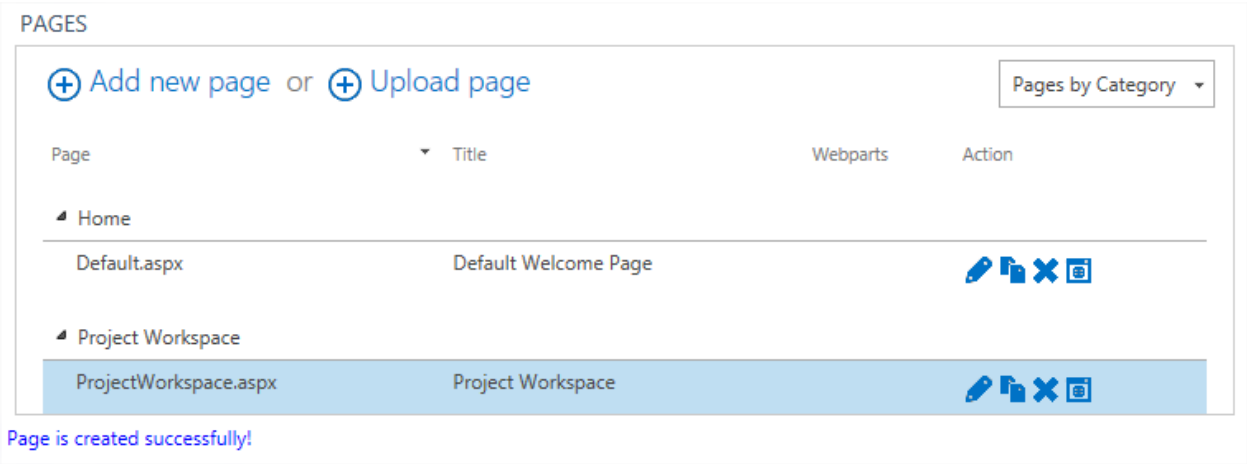
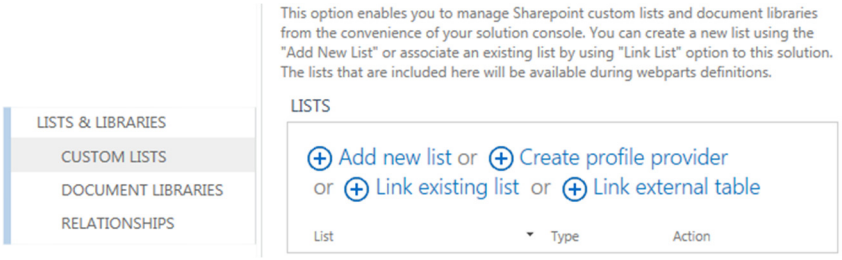


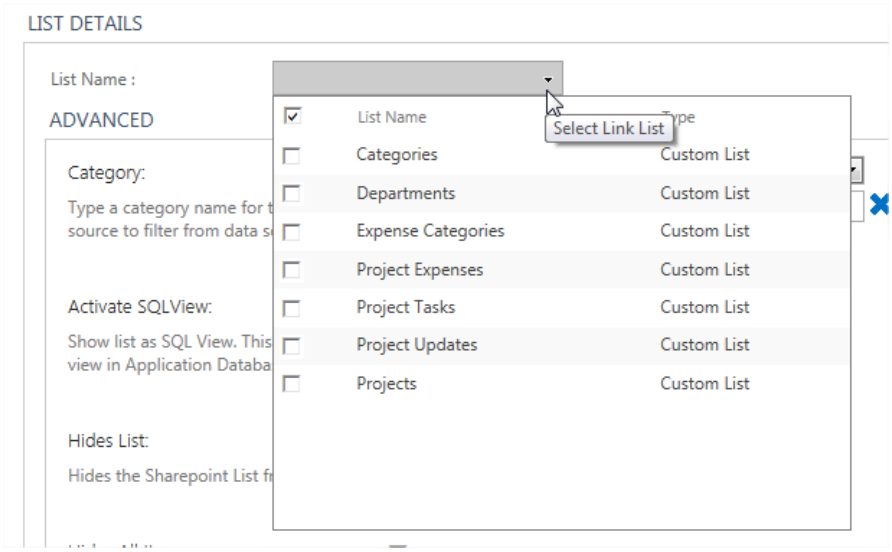
Figure 17 – Page List

1. See blue message: Page is created successfully!
2. New page **ProjectWorkspace**.aspx appears on the list
3. All pages will be listed here, with their web parts

Connect Existing SharePoint Lists to the Solution


This option enables you to manage Sharepoint custom lists and document libraries from the convenience of your solution console. You can create a new list using the "Add New List" or associate an existing list by using "Link List" option to this solution. The lists that are included here will be available during webparts definitions.
LISTS & LIBRARIES
CUSTOM LISTS
DOCUMENT LIBRARIES
RELATIONSHIPS
LISTS
Add new list or Create profile provider
or Link existing list or Link external table
List
Type
Action

1. Click **Custom Lists**
2. Click **Link Existing List**
3. Click **List Name** dropdown
4. Mark all checkboxes
5. Click **Link** existing list button
6. Now all the lists will appear



7. Click on the list name to select all the list
8. Then press link to include all the lists into this solution

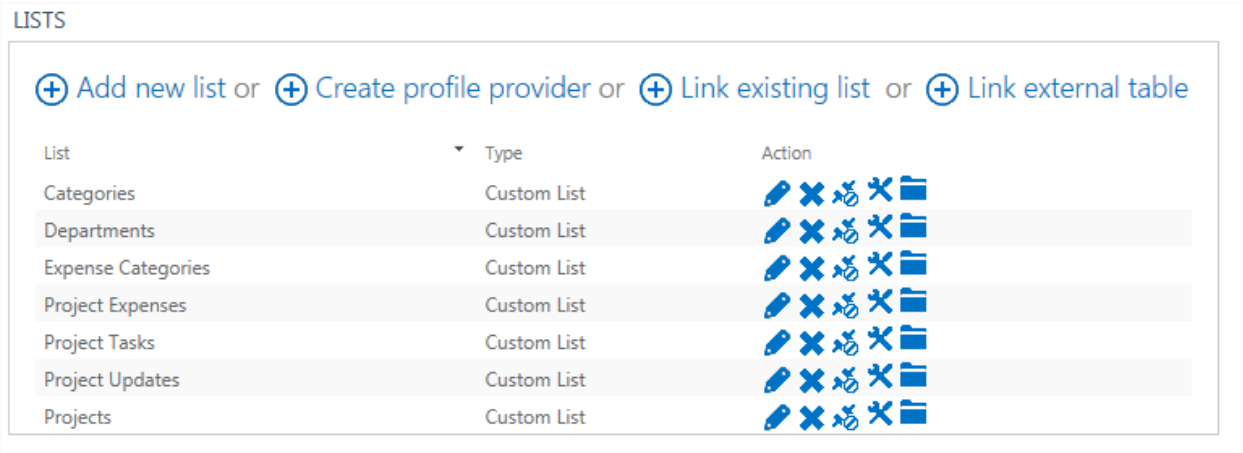


Figure 18 – Linking Existing Lists

Here's the description of each lists and what it does:

List Name	Purpose	Relationships
Projects	Stores all the projects' details	Primary Key is ID
Departments	All the departments within the company	Linked to Projects (Department) By default, the Head of Department is the project sponsor
Project Categories	Different type of projects	Linked to Projects (Category)
Expenses	Stores all the expense items	Linked to Projects (Project)
Expense Categories	Different type of expense items	Linked to Expenses (Category)
Documents	Library to store project documents	Linked to Projects (Project)
Project Updates	Stores all the periodic progress reports for each project	Linked to Projects (Project)
Project Tasks	Tasks assigned to project members	Linked to Projects (Project)

The following are the status fields and its meanings

Lists	Column (Values)	Purpose
Projects	Project Status - New, Approved, Rejected	If a project is approved
Expenses	Status – New, Approved, Rejected, Processed	To determine the approval status for an expense item
Project Reports	Schedule Status, Cost Status and Risk Status	These are status indicator flags for project manager to report on the overall status of a project.

Making SharePoint Relational

To maximize value, you can easily create an Entity Relationship Diagram (ERD) to define all the data relationships in this solution. This feature allows you to transform SharePoint data to work as a relational data source.

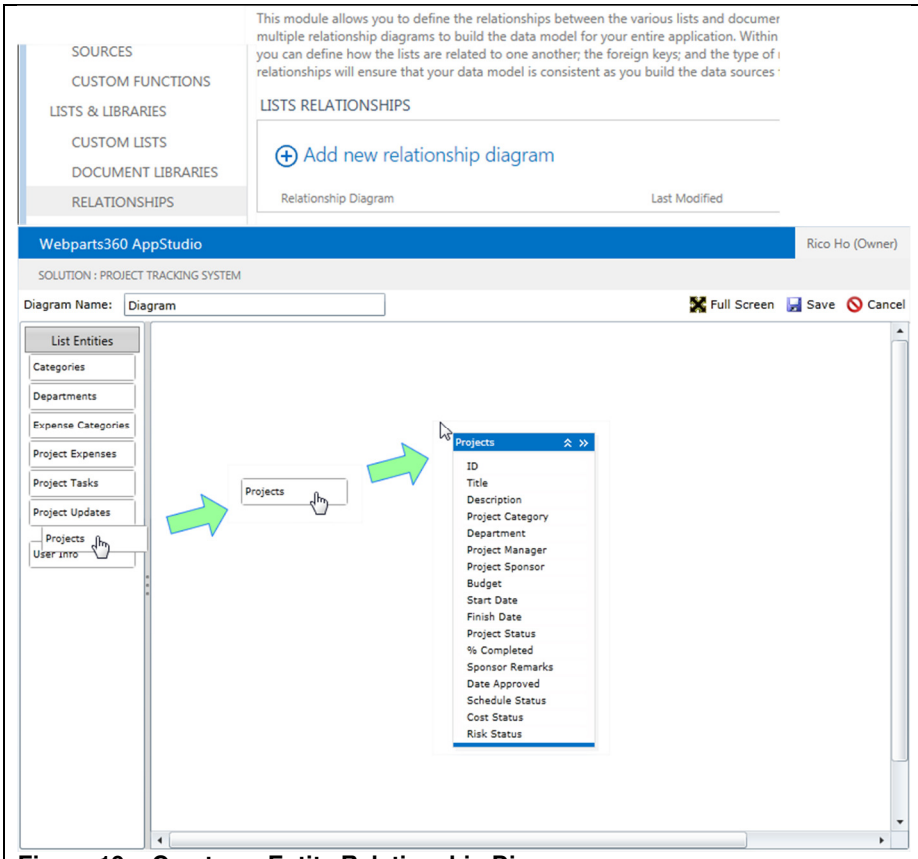


Figure 19 – Create an Entity Relationship Diagram

1. Click **Relationships**
2. Click **Add new relationship**
3. Click **Full Screen** button
4. Drag **Projects** list onto canvas
5. View the fields on this list

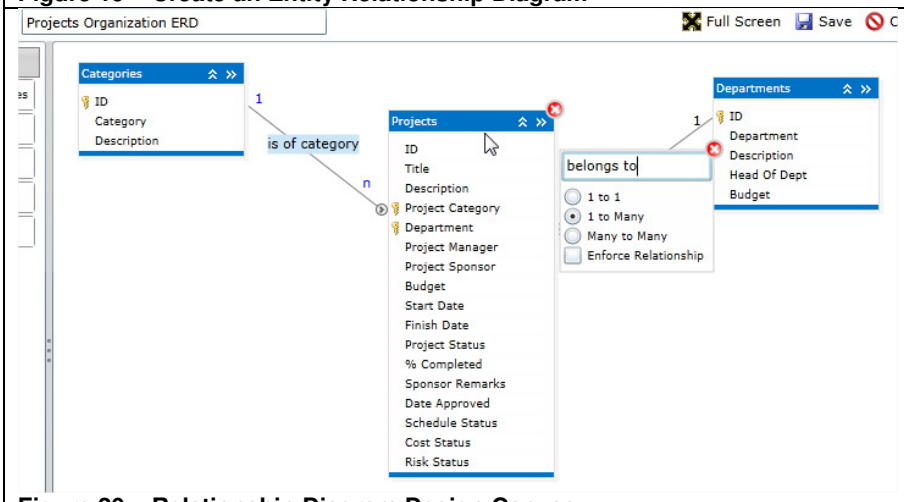


Figure 20 – Relationship Diagram Design Canvas

6. Drag **Departments** to canvas
7. Drag **Project Categories**
8. Update the relationships label
9. Click **Save** button at top right

Creating Menu Navigation

Click **Navigations** on left sidebar. Click **Application Menu**. Click the version to edit.

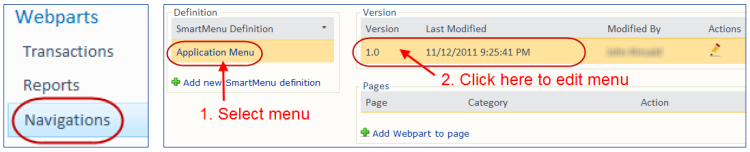


Figure 21 – Editing a Menu

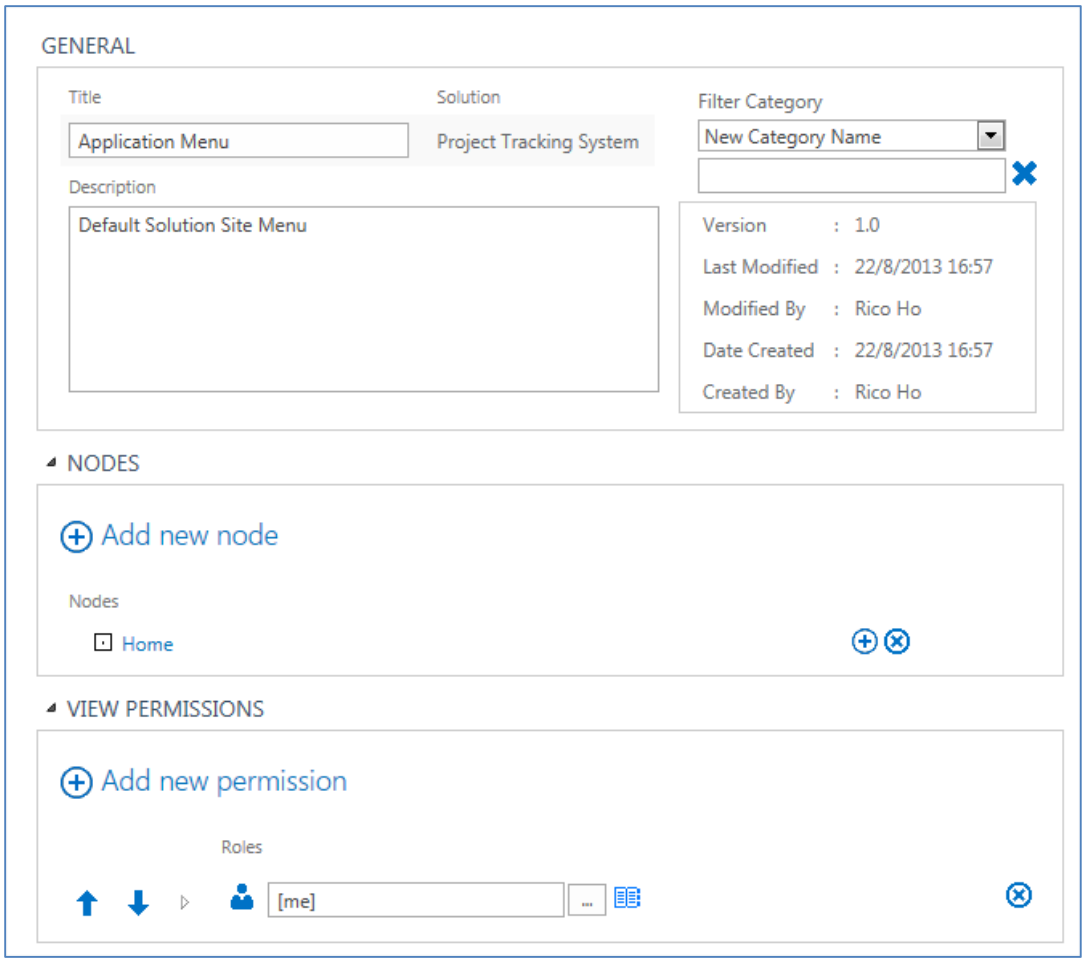


Figure 22 – Menu Edit Screen

1. Click **Add New Node**
2. This creates a new menu tab
3. Enter **Caption**: Approval
4. Find blue button beside URL
5. Click Page icon beside
6. **File Name**: Approval
7. **Title**: Approval

8. **Description**: Approval
9. Click **Create** button
10. Click **Save** button
11. Repeat these steps (add node):
12. **Caption**, **File Name**: Reports

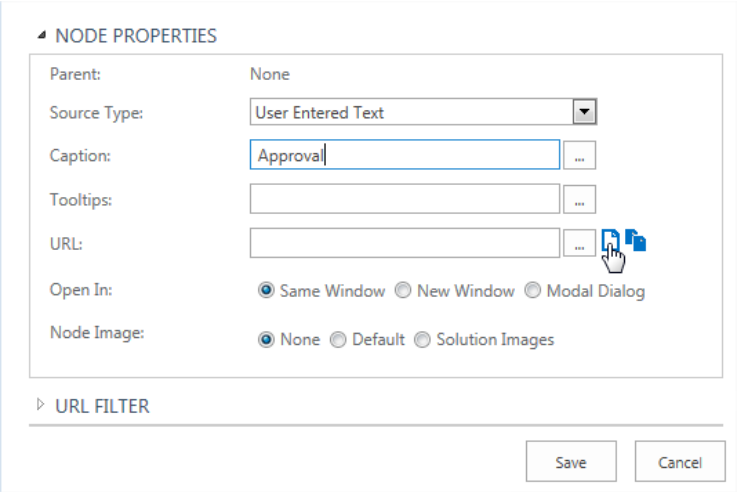


Figure 23 – Adding a New Node (Menu Tab)

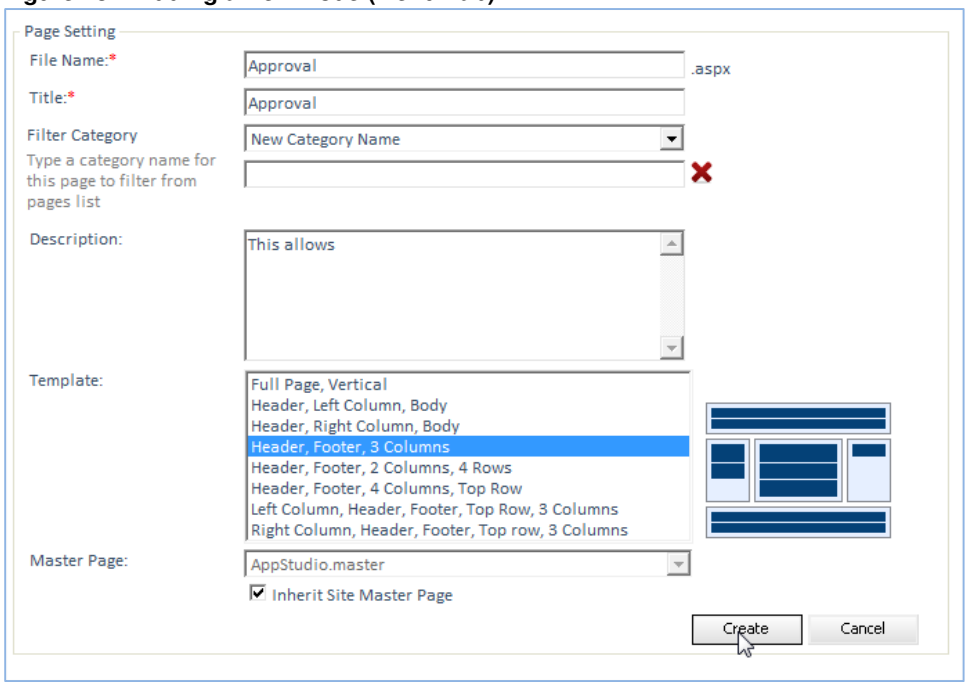


Figure 24: Adding a page

Approval and Reports now appear on the list of Nodes. In Advanced Settings, **Top Menu**, change dropdown to Tabbed Items (double click). Click **Customize** beside it to adjust colors and settings. Click **Save**. Now we have finished creating the menu tabs.

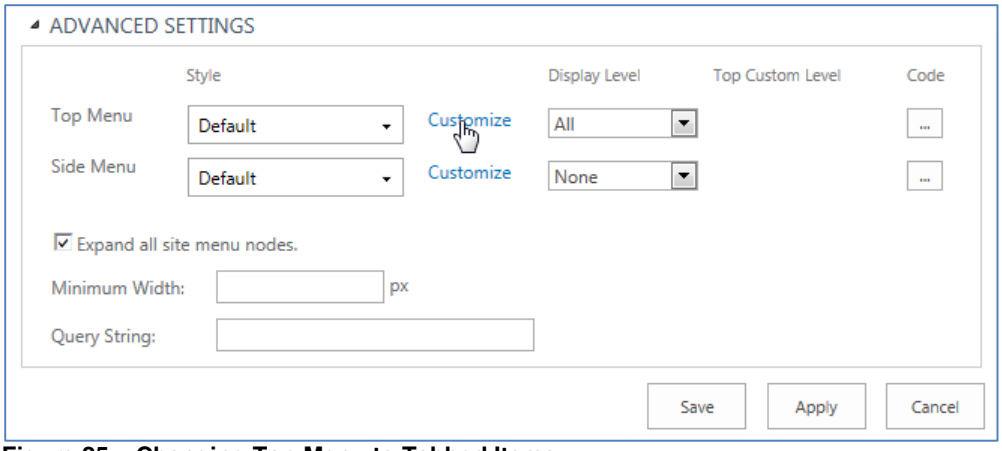


Figure 25 – Changing Top Menu to Tabbed Items

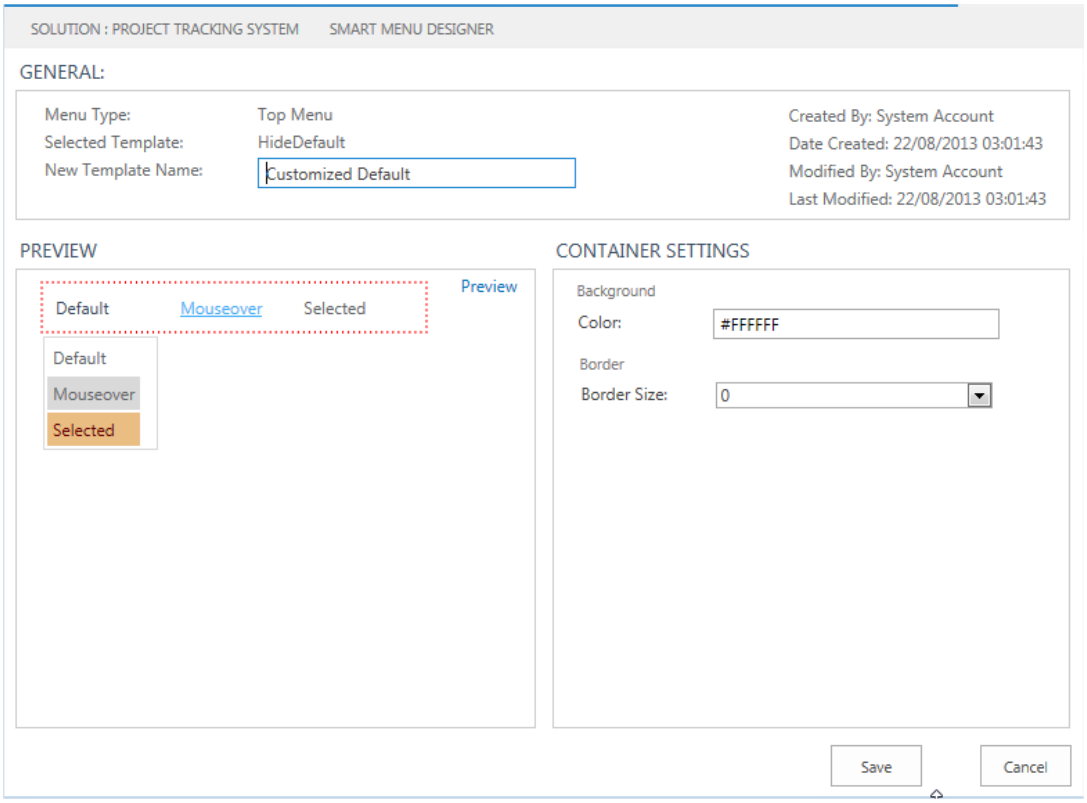
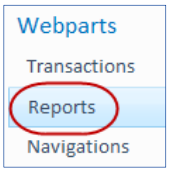


Figure 26: Menu Customization

Building the Project Portfolio Dashboard

Now we can create reports (SmartViews) starting with the main project lists.



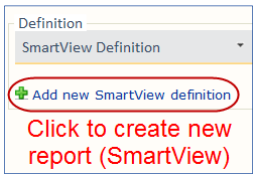


Figure 27 – Creating a Report (SmartView)

1. Click **Reports** on left sidebar
2. Click **Add new SmartView definition**
3. Enter **Title**: Project.Listing
4. Enter **Description**: List of projects

There are 3 steps to defining a SmartView:

1. Add data **source**
2. Build data **views**
3. Assign **permissions** to user groups (control viewing privileges)

Adding a Data Source

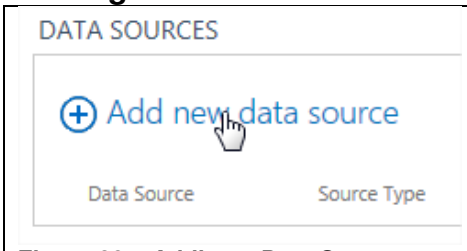
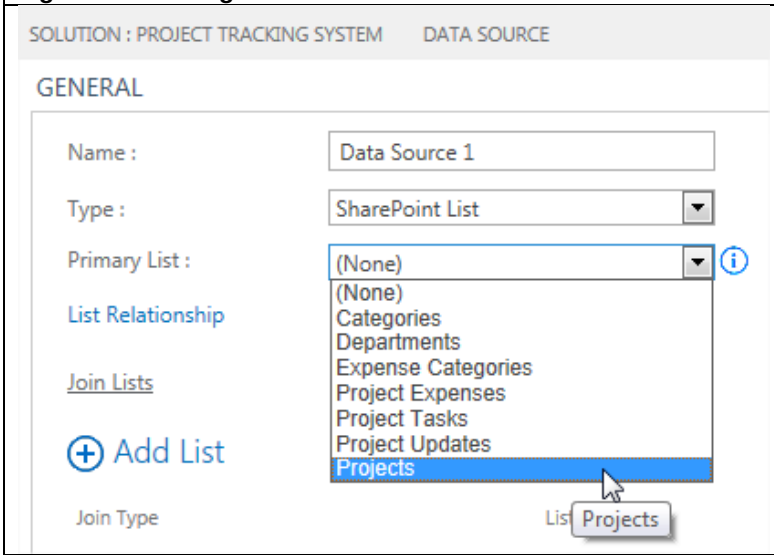


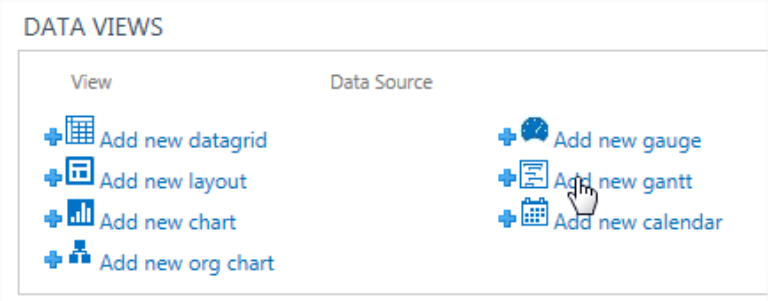
Figure 28 – Adding a Data Source

1. Click **Add new data source**



2. On **Primary List**, pick Projects
3. Scroll down, click **Save** button
4. Data Source **Projects** appears on list
5. Press Save to use it

Adding a Data View



Select a Data View:
Click **Add new Gantt**
Next, we will configure the Gantt chart.

Figure 29 – Adding a Data View

Adjusting Report Columns, Headings and Formats

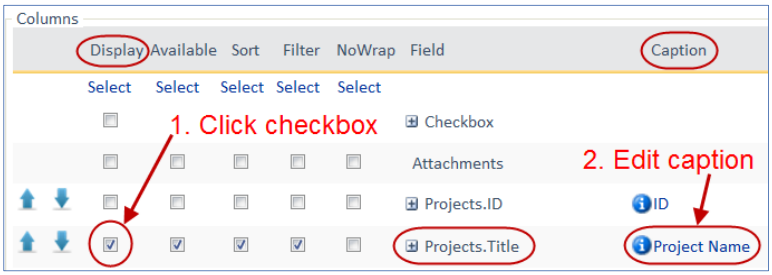


Figure 30 – Selecting a Report Column and Caption

Click 1st checkbox (Display) at the far left of Projects.Title field. This field will now appear on the report. Click the blue caption at the right, change to: Project Name.

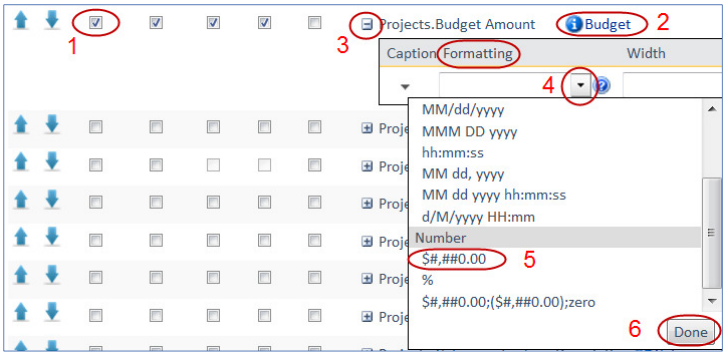


Figure 31 – Changing Display Format on a Report Column

Click 1st checkbox at the far left of Projects.BudgetAmount field. Change the blue caption to Budget. Click + to expand Projects.BudgetAmount, then click Formatting dropdown. Scroll down and pick the first Number format: $#,##0.00 Click **Done**.

Select 2 more fields for this report. Adjust (Blue Caption) to the value in parentheses:
1st checkbox for Projects.Project Manager_UserInfo_Name (Project Manager)
1st checkbox for Projects.Department_Lookup_Description (Department)

Configuring Chart Settings

Click Start Date dropdown, pick Projects.Start Date
Click End Date dropdown, pick Projects.Finish Date
Click Percent Completed, pick Projects.% Completed

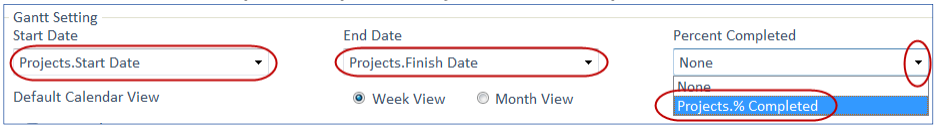


Figure 32 – Selecting Dates for Gantt Chart

Configuring Menu Options

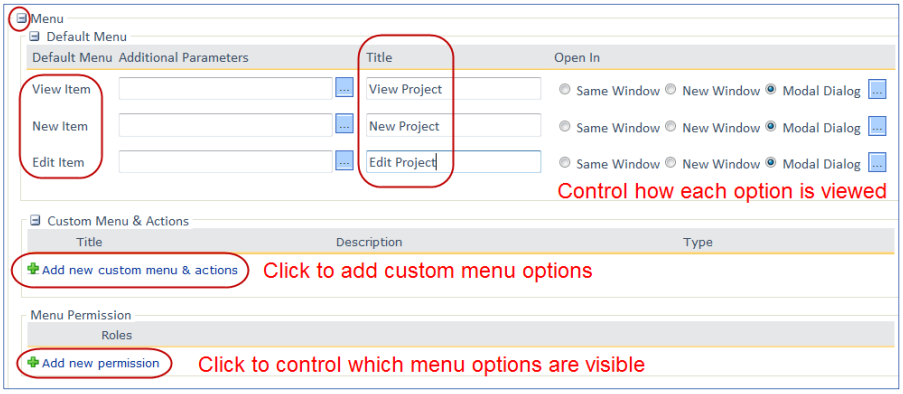
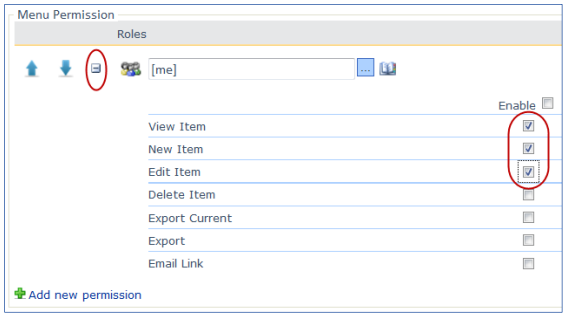


Figure 33 – Configure Menu Options

Expand Menu section (click +).
For View Item, set Title = View Project
For New Item, set Title = New Project
For Edit Item, set Title = Edit Project

Configuring Menu Permissions



Menu permissions allow you to control who has access to each menu option.

Click **Add new permission**. Click + below Menu Permission (between the 2 blue arrows and [me] field). This expands the [me] role (everyone).

Mark the 1st 3 checkboxes (View Item, New Item, Edit Item). Click **Save**. Click **Save** again, to return to the version page.

Figure 34 – Setting Menu Permissions

Adding a Web Part to a Page

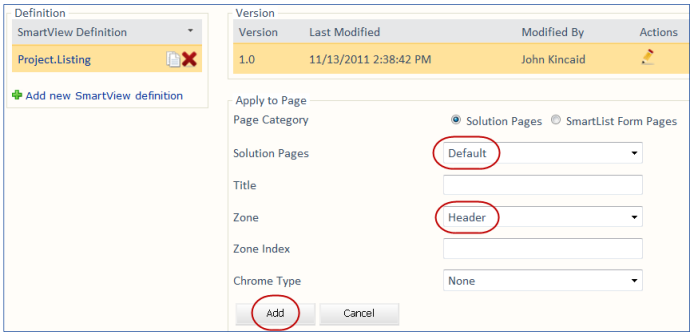


Figure 35 – Adding a Web Part to a Page

Click **Add Webpart to page**.
On **Solution Pages** dropdown, pick Default.
On **Zone** dropdown, change TitleBar to Header.
Click the **Add** button.

Confirming That Your Changes Appear

Refresh your solution page on the browser. For example:
http://server/TrackProjectExpenses/solutionpages/default.aspx

Click the **Home** tab. The new Gantt chart should appear on your default page. (You may have to refresh again to make the chart wider.)

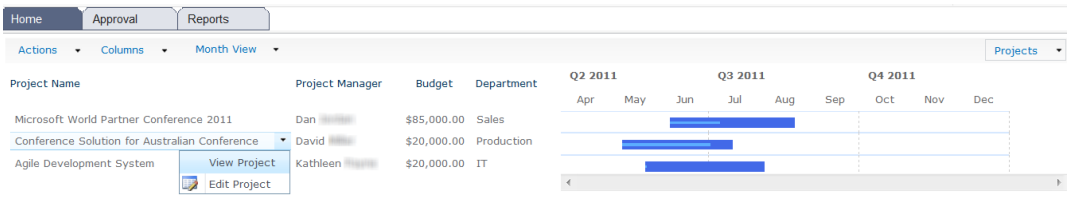
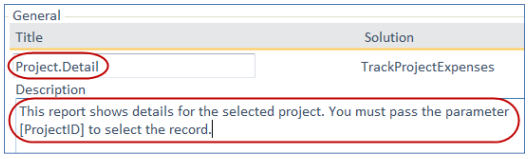


Figure 36 – Gantt Chart Appears on Home Tab

Creating Drill-down Reports

Defining the Project Detail Report

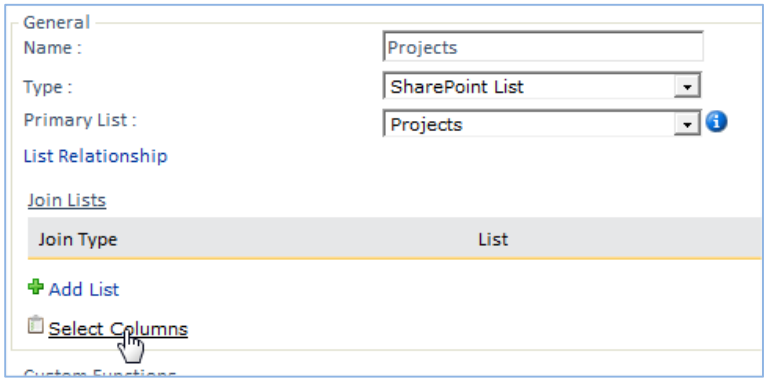


Now we are ready to add a drill-down page to zoom in on Project Workspace details.

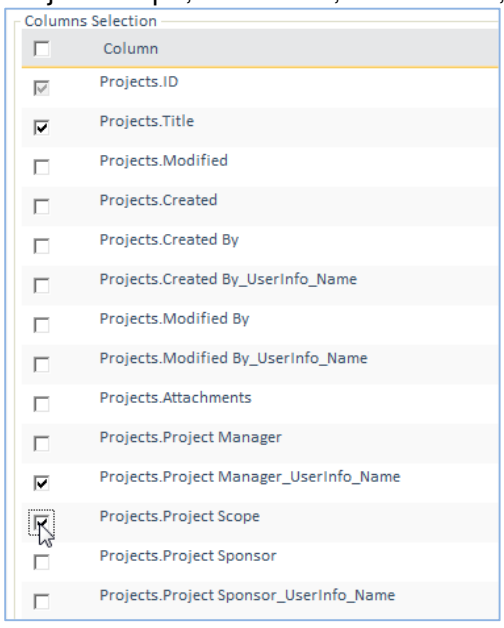
1. Click **Reports** on the left sidebar
2. Click **Add new SmartView definition**
3. Create a new report on this screen
4. Enter **Title**: Project.Seleted

Figure 37 – Creating Project.Selected Drill-down Report

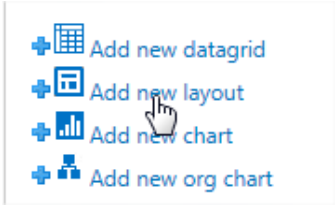
Enter **Description**: This report shows details for the selected project. You must pass the parameter [ProjectID] to select the record. Click **Add new data source**. On **Primary List**, pick Projects, as shown in Figure 28 – Adding a Data Source.
Click Select Columns, the blue link at the lower left of the screen with Primary List.



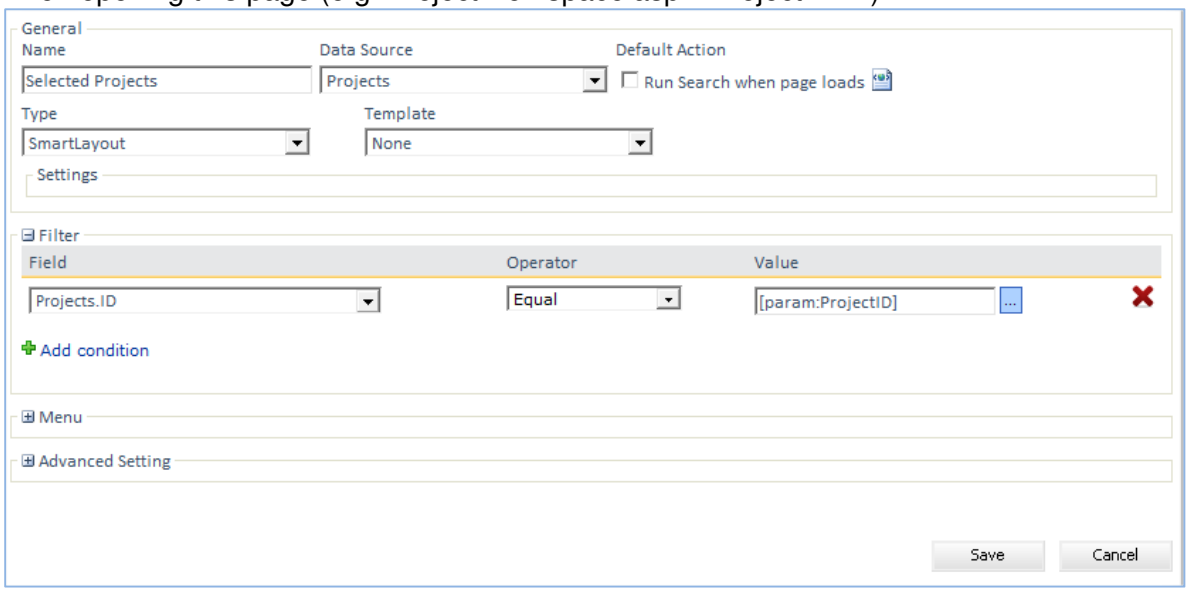
Click the top checkbox twice to clear all boxes.
Select Projects fields: ID, Title, Project Manager, Project Manager_UserInfo_Name, Project Scope, Start Date, Finish Date, Budget Amount



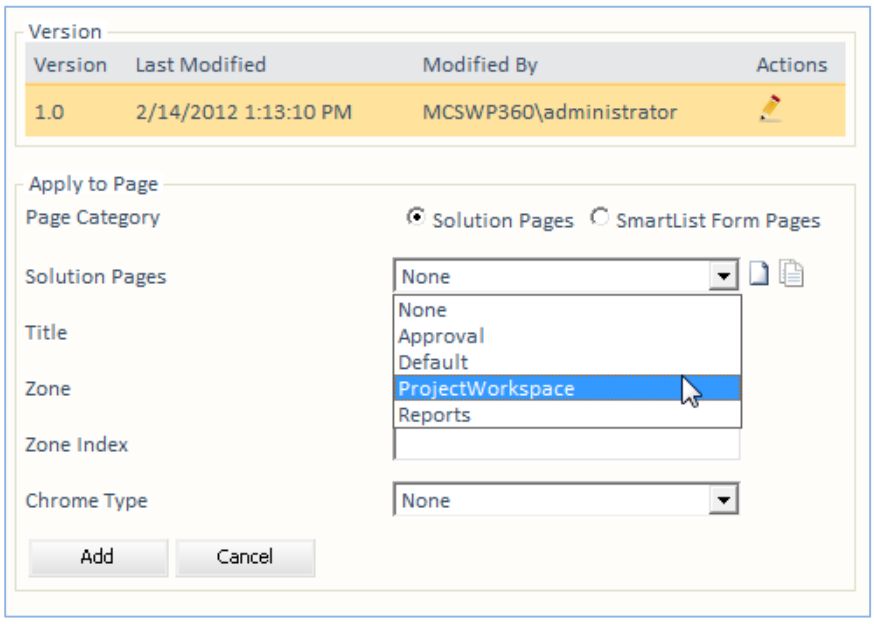
Click **Save** button on the selected column. Next add a Layout to display the selected project details.



Select the data source and set the filter condition for Projects.ID = [param:ProjectID]. This will restrict the report to only display records that meet the parameter (ProjectID) that is passed when opening this page (e.g. ProjectWorkspace.aspx?ProjectID=N)



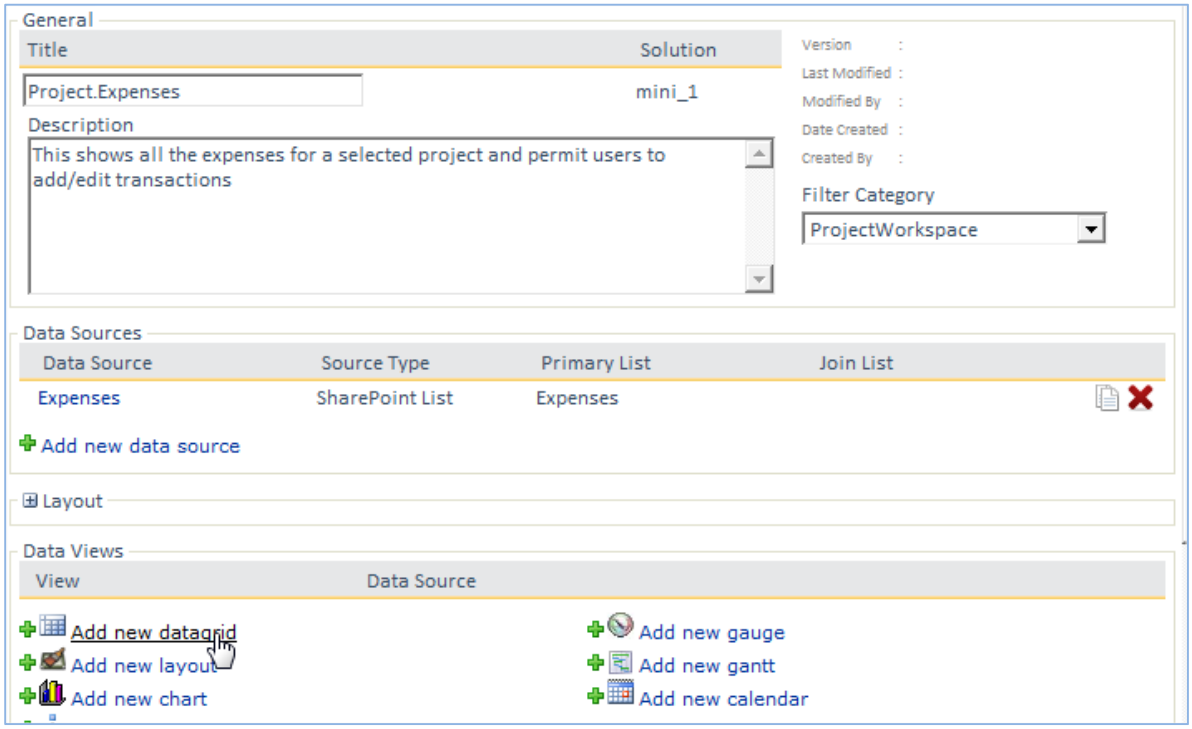
Save this web part view and add it to the ProjectWorkspace.aspx page under the “Header” zone.



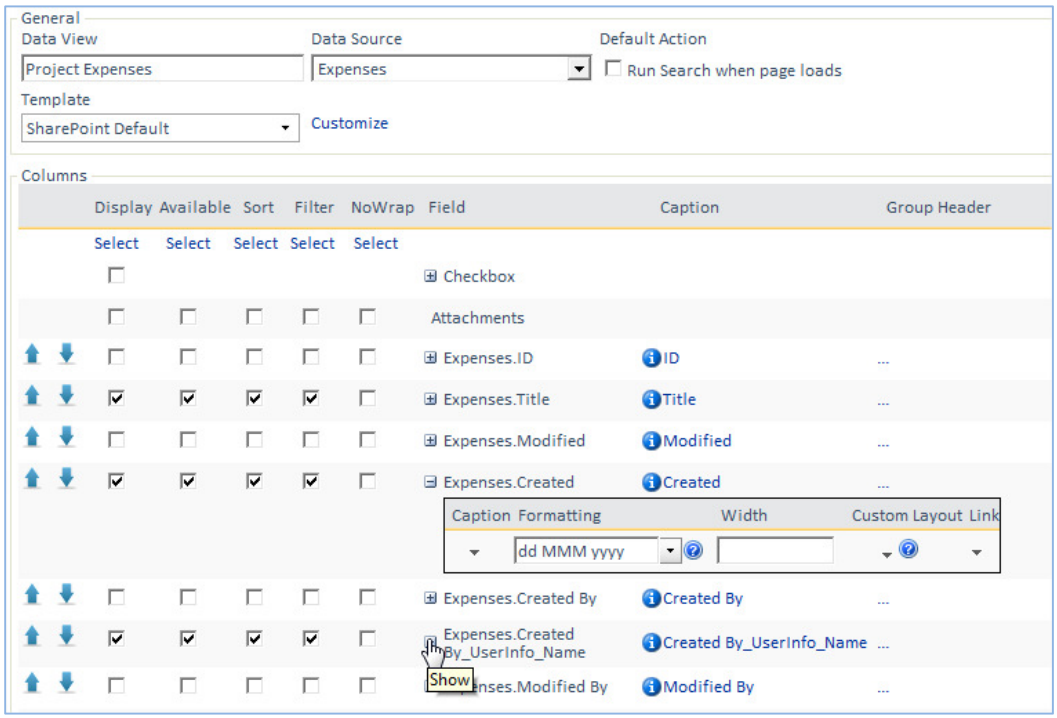
Defining Expenses Listing for Project Workspace

Now we will create the expenses lists for a selected project which is part of our project workspace page.

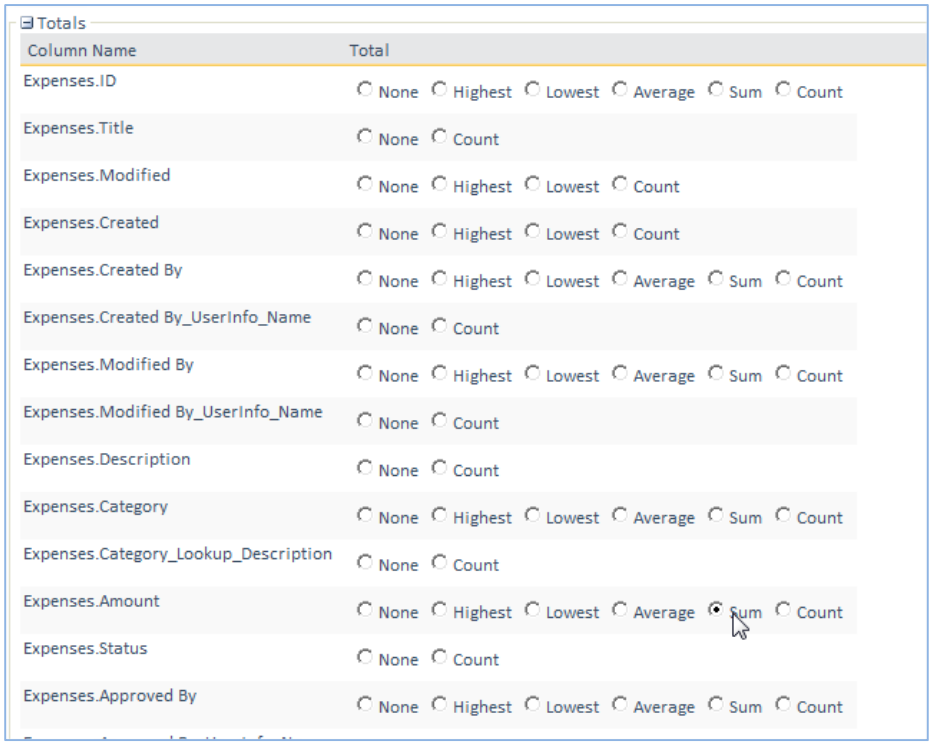
Add a new SmartView called “Project.Expenses”, using Expenses as a data source.



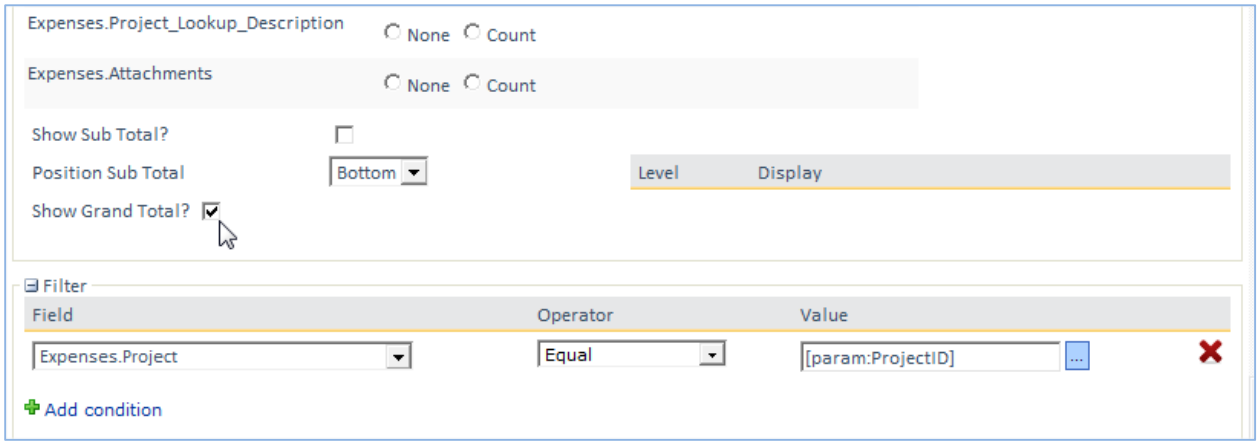
Next, add a datagrid and select the columns that you wish to display.



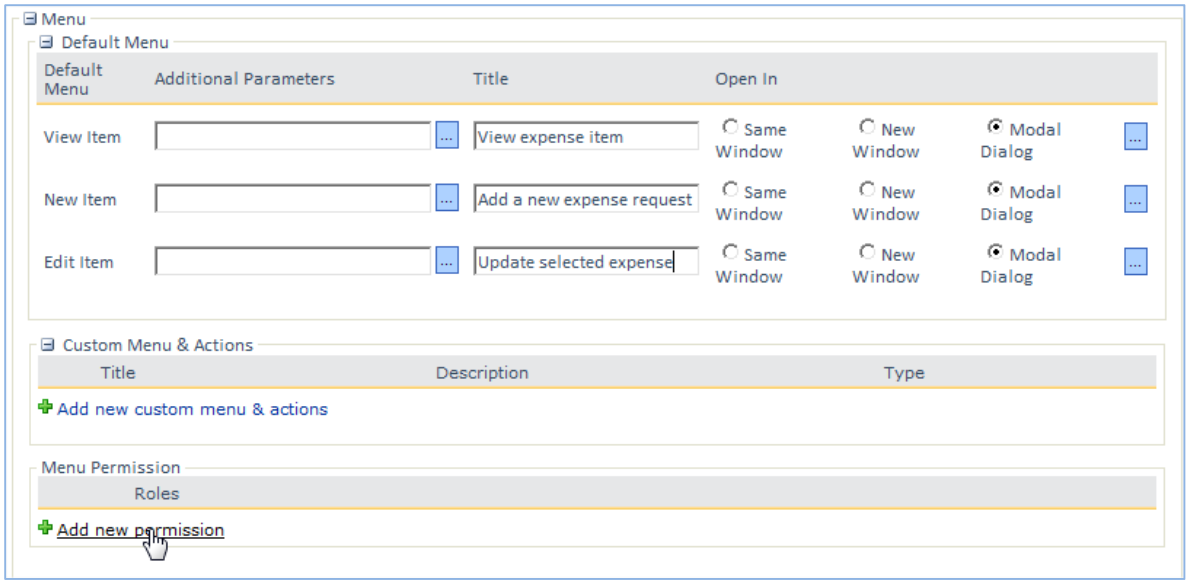
Add a grouping on Amount to calculate the total expenses for a selected project.



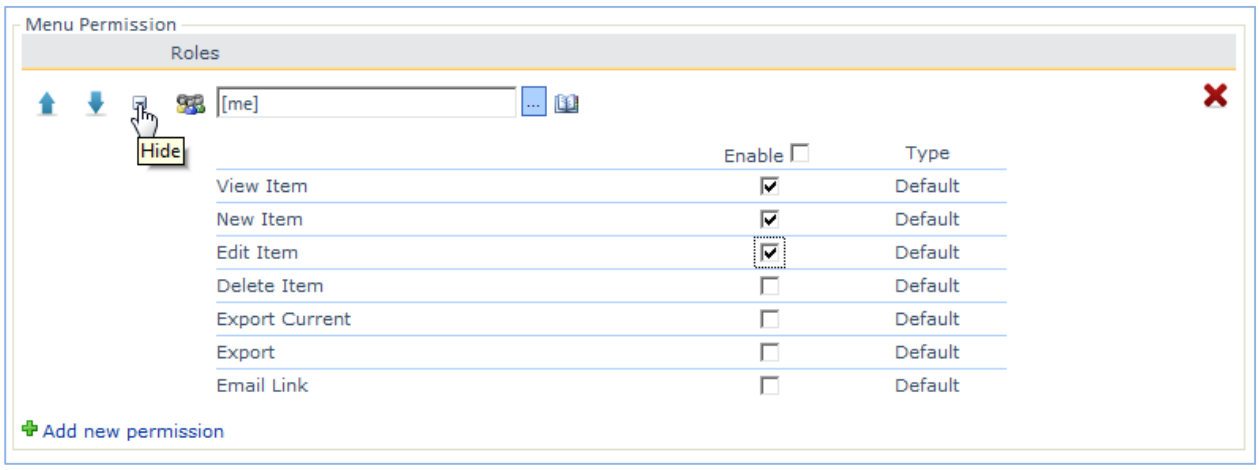
Add a filter condition for Expenses.Project equal to [param:ProjectID] so that we will only display expenses for the selected project. Select to display the total at the bottom. And add a filter condition for Expense.Project = [param:ProjectID].



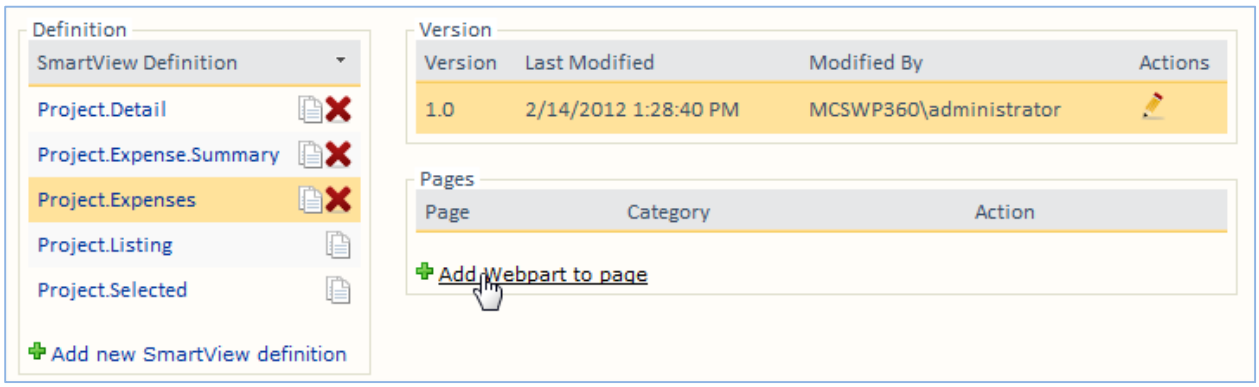
Change the menu caption so reflect the context.



Add a new permission, and select the menu options that are available to the user.



Save this view and also the web part. Then add it to the ProjectWorkspace page.



Place the webpart into the Footer zone. And you are done.

Defining the Project Expense Summary Report

Create another new report to summarize total expenses on each project:
Click **Add new SmartView definition**
Enter **Title**: Project.Expense.Summary
Enter **Description**: Shows the total expenses for each project.

Click **Add new data source**. Enter **Name**: Expenses by Project
On **Primary List**, pick Projects. Under Join Type, click Add List.
Join this list to Expenses: click Expenses on the List dropdown.

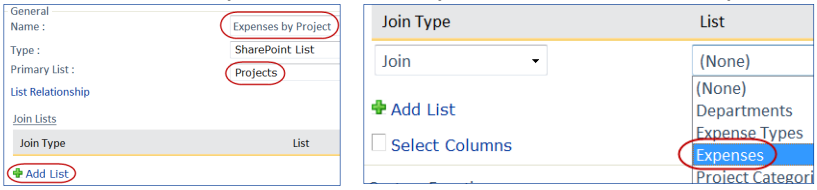


Figure 38 – Joining Lists

Join column is based on the relationship defined earlier in your diagram. Click **Save**.

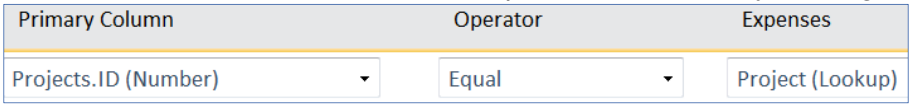
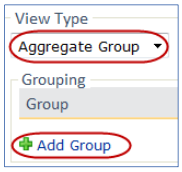


Figure 39 – Join Column Relationship



We need to group the data by Project.

1. Under **View Type**, pick Aggregate Group.
2. Under Grouping, click **Add Group**
3. Click the **Group** dropdown
4. Select Projects.Title(nvarchar(255))

Figure 40 – Adding an Aggregate Group

Next, select which columns to calculate. Under **Measures**:
Projects.ID: mark the **Min** checkbox.
Projects.Budget Amount: mark the **Min** checkbox.
Expenses.Amount: mark the **Sum** checkbox. Click **Save**

- Projects.ID Min will return the Project ID
- Projects.Budget Amount Min will return the Project budgeted expenses.
- Expenses.Amount sum will calculate the total **actual** expenses

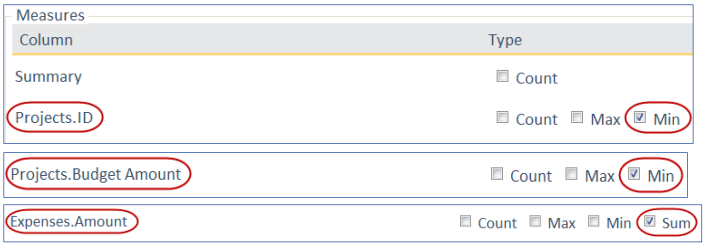
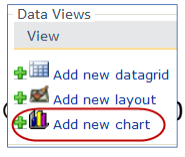


Figure 41 – Marking How to Aggregate Each Column

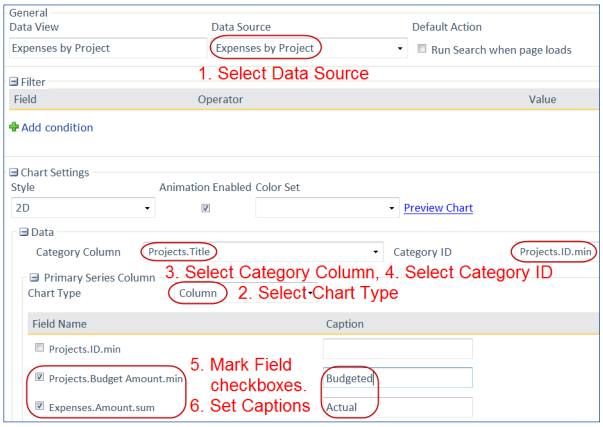
Adding a Bar Chart for Expenses by Project



Next, create a new bar chart.

Under Data Views, click **Add new chart**.

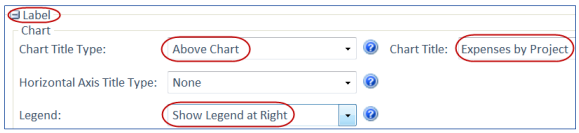
Figure 42 – Adding a New Chart



1. **Data Source**: Expenses by Project (Data View changes to this name)
2. **Chart Type**: pick Column
3. **Category Column**: Projects.Title
4. **Category ID**: Projects.ID.min
5. Under **Field Name** section, mark checkbox Expenses.Amount.sum, **Caption**: Actual
6. Mark Projects.Budget Amount.min **Caption**: Budgeted

Figure 43 – Configuring Settings for a Bar Chart

Add labels on the bar chart:



Click + to expand the **Label** section.
Chart Title Type: Above Chart
Chart Title changes to: Expenses by Project
Legend: Show Legend at Right

Figure 44 – Adding Labels to a Bar Chart

Create a drill down on the bar chart: Click + to expand **Advanced Settings** section.
Mark the **Chart Item checkbox**. Click **Same Window** radio button. Click blue box:

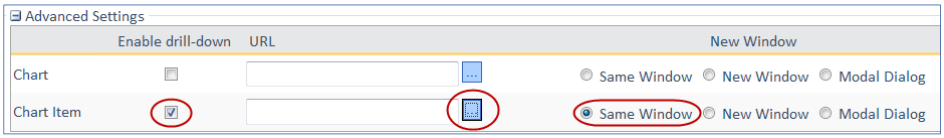


Figure 45 – Enabling Drill-down on a Bar Chart

Select Page: pick **Page** on dropdown, then pick **ProjectWorkspace**.aspx

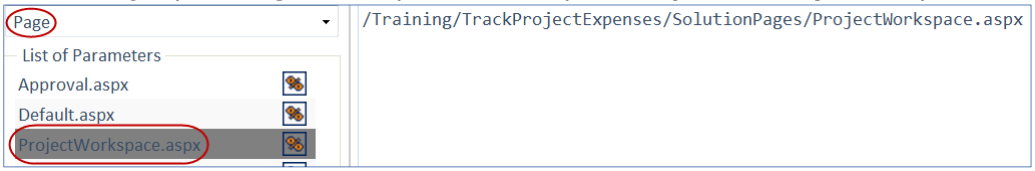


Figure 46 – Selecting the Page for Drill-down on a Bar Chart

Add a parameter (to choose which Project), and pass it the **Category**:
After /ProjectWorkspace.aspx, type: ?ProjectID=
Change dropdown list from Page to **Chart Elements**. Click **CategoryID**.
The path should now be:
/SolutionPages/ProjectWorkspace.aspx?ProjectID=[FromCategory]
Click **OK**, click **Save**, and then click **Save** again.

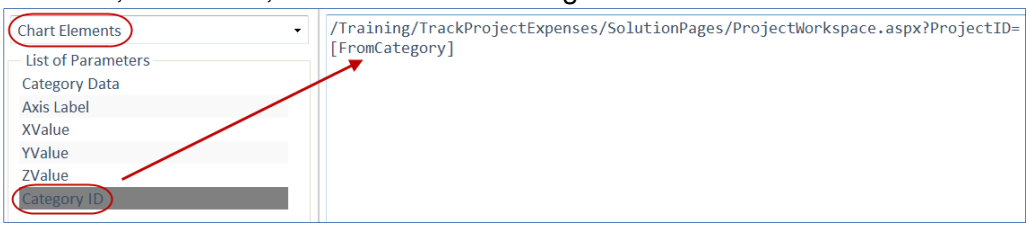


Figure 47 – Adding a Parameter for Drill-down on a Bar Chart

Drop the bar chart web part onto your Reports page: Click **Reports** on left sidebar.
Under SmartView Definition, highlight Project.Expense.Summary
Click **Add Webpart to page**
On **Solution Pages** dropdown, change None to **Reports**
Change **Zone** from Titlebar to Header. Click **Add** button.

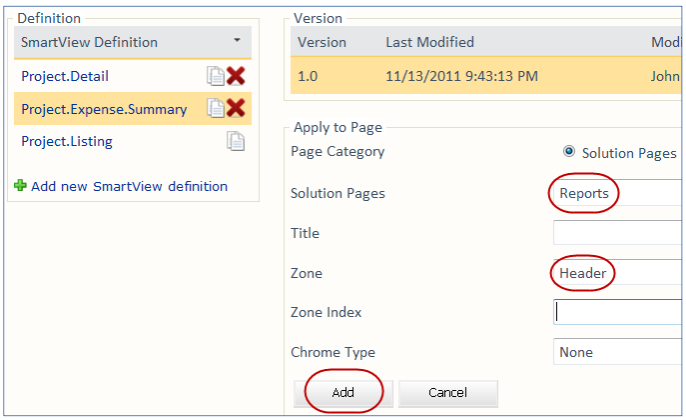


Figure 48 – Adding Bar Chart Web Part to Reports Page

Confirming That Your Changes Appear

Refresh your solution page on the browser. For example:
http://sps2013/TrackProjectExpenses/solutionpages/default.aspx
Click the **Reports** tab. The bar chart should appear on your Reports page.

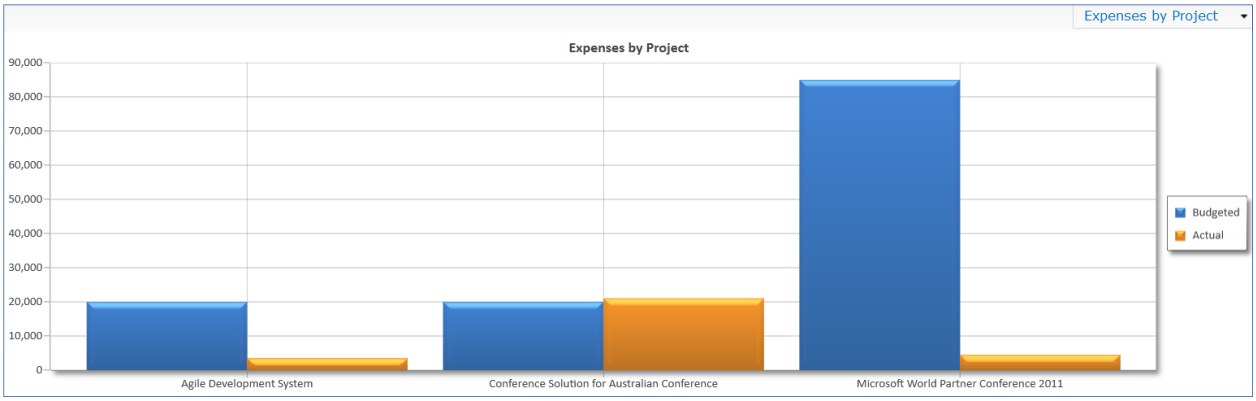
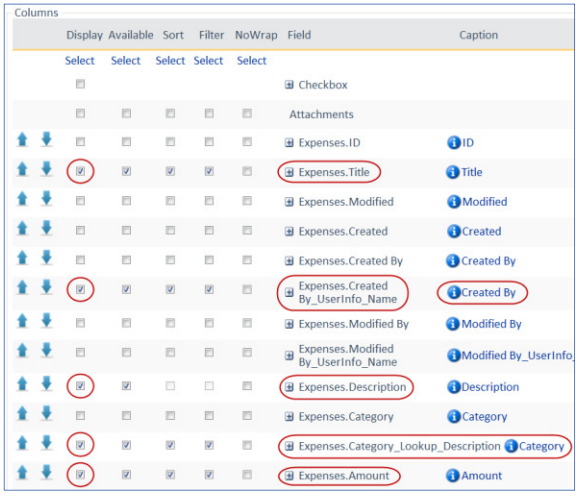


Figure 49 – Bar Chart Appears on Reports Page

Defining the Project Expense Detail Report

Now we will create another drill-down report: Project Expense **Detail**. Similar to the Summary report, we will add a new SmartView and call it Project.Expense.Detail. We add a data source, select Expense list. This time leave it as Default view, and Save.

Click **Add new smartview**, as shown in Figure 27 – Creating a Report (SmartView).
Title: Project.Expense.Detail, Figure 37 – Creating Project.Selected Drill-down Report
Click **Add new data source**, **Primary list** = Expenses, see Figure 38 – Joining Lists.
Leave **View Type** = Default View. Click **Save**.



Click **Add new datagrid**
Select the columns you want to display:
Click the 1st checkbox for:
-Expenses.Title
-Expenses.Created By_Userinfo_Name
(Caption: Created By)
-Expenses.Description
-Expenses.Category_Lookup_Description
(Caption: Category)
-Expenses.Amount

Figure 50 – Selecting Datagrid Columns and Captions

Click + to expand Expenses.Amount, then click Formatting dropdown. Scroll down and pick the first Number format: $#,##0.00 Click **Done**.
See Figure 31 – Changing Display Format on a Report Column.

Add a total to Expense.Amount column:
Click + to expand **Totals** section, find Expense.Amount row, click **Sum**.
Mark the "Show Grand Total?" checkbox at the lower left.
See Figure 41 – Marking How to Aggregate Each Column.

Add a filter by Project: Click + to expand **Filter** section, click +Add Condition
Change **Field** dropdown from None to Expenses.Project
Change Operator dropdown from (None) to Equal
In Value field, type: [param:ProjectID]

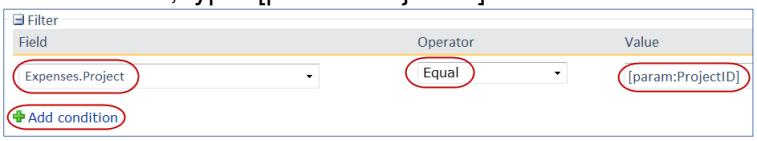
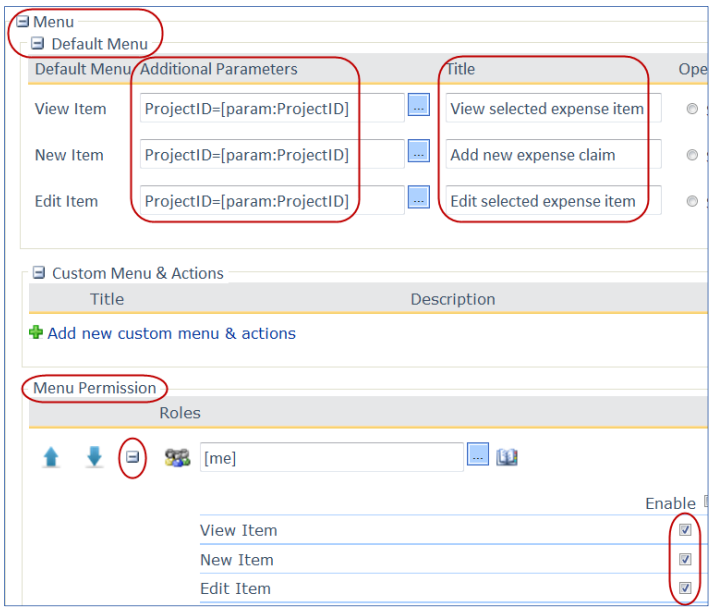


Figure 51 – Adding a Filter Condition With a Parameter



Create the menu: Click + to expand the **Menu** section, then see Default Menu.

Define parameters: On all 3 rows (View Item, New Item, Edit Item) under **Additional Parameters** column, paste this:

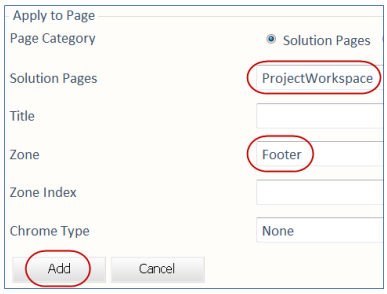
ProjectID=[param:ProjectID]

Under the **Title** column, put these values (different for each row):
View Item:
View selected expense item
New Item: Add new expense claim
Edit Item:
Edit selected expense item

Under **Menu Permission**, click **Add New Permission**. Click + after the 2 blue arrows
This expands the [me] role.

Figure 52 – Configuring Menu Parameters and Permissions

Click the 3 checkboxes to Enable View Item, New Item and Edit Item for [me] role.
Click **Save**, and then click **Save** again, to create the menu.



Add the menu web part to the page:
Click **Reports** on left sidebar. Under SmartView definition, highlight Project.Expense.Detail
Click +Add Webpart to page
On **Solution** pages dropdown, pick ProjectWorkspace
Change **Zone** from TitleBar to **Footer**
Click **Add** button

Figure 53 – Adding Menu Web Part to Page

On Project.Listing SmartView, click version 1. Click **Projects** data view.
Expand Projects.Title field, click **Link** dropdown at the far right, click Same radio button. Click blue box. Pick **Page** in dropdown, click ProjectWorkspace.
(If the link does not end with "?ProjectID=", then you did not add the parameter to the Expense Summary data view correctly).

Change dropdown to **Data Column**. Choose **Projects.ID**
The path should now be: /TrackProjectExpenses/SolutionPages/
ProjectWorkspace.aspx?ProjectID=[FromColumn:Projects.ID]
Click **OK**, click **Done**, click **Save**, and then click **Save** again.

We have finished creating a contextual report with drill-down capability.

Confirming That Your Changes Appear

Refresh your solution page on the browser. For example:
http://sps2013/TrackProjectExpenses/solutionpages/default.aspx
On Home tab, now you can click any of the Project Names in the first column.
Click the 2nd project name: Conference Solution for Australian Conference.

Actions Columns 1 - 2 of 2 Expenses

Title	Created By	Description	Category	Amount
New Server	John Kincaid	64 bit Quad Core Server + 16GB RAM	Fixed Assets	$8,500.00
Hosting for Jan-June	John Kincaid	10U Rack + 2MB Bandwidth	Services	$12,500.00
Grand Total:				$21,000.00

Figure 54 – Project Expense Detail Drill-down Report Appears

Defining the Project Expense Pending Report

Now we will create another report: Project Expense **Pending** by cloning the Project.Expense.Detail report. This report will be added to the Approval tab, so that the Project Manager can see a list of New expenses waiting to be approved.

Click **Reports** on sidebar. Under **SmartView Definition**, click Project.Expense.Detail.
Click the white icon to clone it. On the copy:
Change **Title** from Project.Expense.Detail to Project.Expense.Pending
Change **Description** to: Expenses pending my approval.
Edit Expenses **Data View**, rename it to Pending Expenses
Mark 1st checkbox for the field Expenses.Created
Mark Expenses.Modified By_UserInfo_Name (Caption = Modified By)
Clear the 1st checkbox on Expenses.Category_Lookup_Description
Mark Expenses.Project_Lookup_Description (Caption = Project)

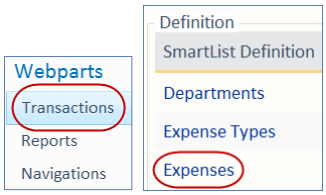
Expand **Totals** section, nothing should be marked.
So remove **Sum** from Expenses.Amount by clicking None.
Clear the checkbox at lower left for **Show Grand Total**.
Expand **Filter** section. Change **Field** dropdown from
Expenses.Project to Expenses.Status
Change **Value** from [param:ProjectID] to New

Expand **Menu** section. Erase ProjectID=[param:ProjectID]
under **Additional Parameters** on all 3 rows.
Change the 3 **titles** to View Expense, Add Expense, Edit Expense.
Expand **Menu Permission** section (click the + beside [me])
Clear the checkbox on **New Item**. Click **Save**.

Finally select SmartView Project.Expense.Pending, click **Add webpart to page**
Change **Solution pages** to Approval, **Zone** = Left Column, **Save**.
Refresh browser on the Approval tab, you should see headings for New expenses.

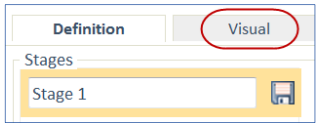
Making SharePoint Transactional

Now that our reports are ready, let's define a transaction, using the expense claim as an example. Webparts360 makes SharePoint transactional, enabling SharePoint to understand the steps in the process when an expense is submitted and approved.



Click **Transactions** on the left sidebar.
Under SmartList definition, click **Expenses** to edit.
This displays the **Transactions** screen.

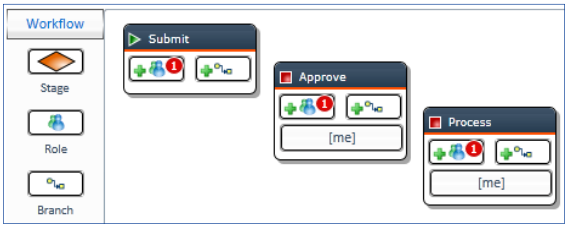
Figure 55 – Creating a Transaction



The screen opens on the Definition tab. Click the **Visual** tab.
This displays the transaction workflow **design canvas**.

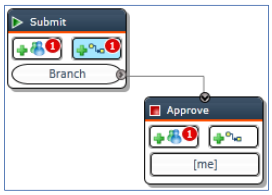
Figure 56 – Visual Tab on Transaction Screen

The canvas opens with the default Stage1 icon. Double-click icon to change caption.
Rename the Stage1 icon by replacing the text "Stage 1" with **Submit**



Drag a Stage icon from the left sidebar onto the canvas. Rename it **Approve**.
Drag another Stage icon to the canvas;
Rename it **Process**.
Now you have 3 stages on the canvas:
Submit, Approve, Process

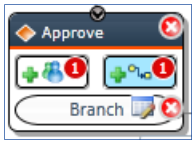
Figure 57 – Transaction Workflow Design Canvas With 3 Stages



Next drag a branch icon from left sidebar onto **Submit** stage. Then drag the tip of this branch from Submit onto the **Approve** stage. (Release the mouse when the stage border turns blue; this connects the link.) Now the Submit stage is linked to flow into the Approve stage.

Figure 58 – Adding a Branch to Link 2 Stages

Drag a new branch from sidebar to Approve stage. Then drag the tip of the branch from Approve onto the Process stage. Now Approve stage is linked to Process stage.



Click the **Edit Branch Icon** to set the branching condition. Hover the mouse over the Branch oval at the bottom of the Approve stage. A small blue & white icon appears (tool tip: Edit Branch); click this icon.

Figure 59 – Edit Branch Icon

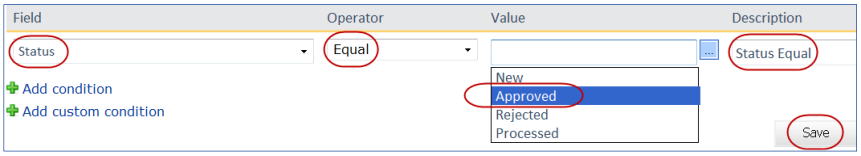


Figure 60 – Edit Branch "Condition Setting" Screen

The **Condition Setting** screen will pop up.
On the **Field** dropdown list, change None to **Status**.
On the **Operator** dropdown list, change (None) to **Equal**
Click the mouse into the **Value** field, and a list appears. Click **Approved**.

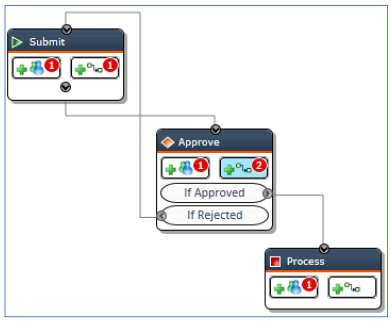
In Description field at the far right, change text from: "Status Equal Approved"
to: **If Approved**, and click **Save** button.

Notice that the Branch oval in the Approve stage shows "If Approved". The arrow indicates "If Approved, go to Process stage".
The shorter "If" description makes the flow chart easier to read.

Figure 61 – Simplifying a Branch Description to Indicate Flow

Repeat these steps to send Rejected status back to Submit stage:
Drag a new branch from sidebar to Approve stage.
Then drag the tip of the branch from Approve back to Submit stage.
Mouse over the new Branch oval in Approve stage, click **Edit Branch** icon.

The **Condition Setting** screen will pop up.
On the **Field** dropdown list, change None to **Status**.
On the **Operator** dropdown list, change (None) to **Equal**
Click the mouse into the **Value** field, and a list appears. Click **Rejected**.



In **Description** field, change text:
from “Status Equal Rejected” to: **If Rejected**.

Click **Save** button. Notice that the last Branch oval in the Approve stage now says "If Rejected" and the arrow says "go back to Submit stage". To re-open the canvas, click **Transactions** on the sidebar, click SmartList Definition **Expenses**, click version 1.0, click **Visual** tab.

Figure 62 – Design Canvas With 3 Stages Linked by 3 Branches

Click the **User** icon at the top left of the Submit stage. It will turn yellow. The word [me] appears at the bottom of the stage. This is a SharePoint reserved word meaning everyone. Mouse over the [me] and click **Edit Role** icon.

Figure 63 – User Icon and Edit Role Icon in a Stage

The pop-up screen **Role Definition for Submit** allows you to select the form you want to change. Mouse over New Form 1; click the **Edit Form** icon.

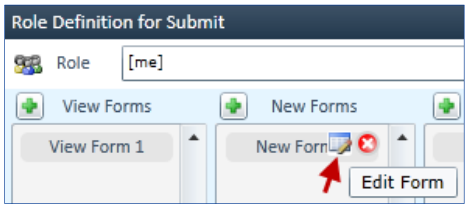
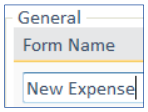


Figure 64 – Role Definition Screen for Submit Stage



Change the Form Name from "New Form 1" to New Expense

Figure 65 – Renaming a Form on Edit Form Screen

Now select which columns you want to enable, lock or hide.
On the gray heading bar for **Column Permissions**, there are 3 icons:

Green check mark means the field is editable

Yellow lock means the field is locked (can't be changed)

Red circle slash means not visible (hidden)

Notice the blue arrows Status to the left of Status column.
Click the blue down arrow to move Status after Approved By.

Find the Project column at the bottom of the list. Click the blue up arrow beside Project 4 times to move Project after Amount and before Approved By. You must move the mouse up with each arrow click, as Project moves higher on the list.

By default, all fields on the Column list have the blue radio button selected under the green check mark, so all fields are editable when you open this screen. This setting is correct for the 1st 6 fields: Title, Attachments, Description, Category, Amount, Project
These 6 fields should all have the blue dot in the green check mark column.
All team members should be allowed to edit and Submit these values.

The **Approved By** field should be locked, so click the circle under the yellow lock column for Approved By. The value for Approved By will be the project manager for the selected project. The value will be visible, but users cannot change it.

The last 3 fields: Status, Approval Remarks, and Date Approved should all be hidden at the Submit stage. This is because they are not used when you create a new expense item. These 3 fields are only used at the Approval stage (on a different form). So click the circle under the red circle slash column for these 3 fields.

Click **Save**, then **OK**. Click **Save** for the Expenses transaction.

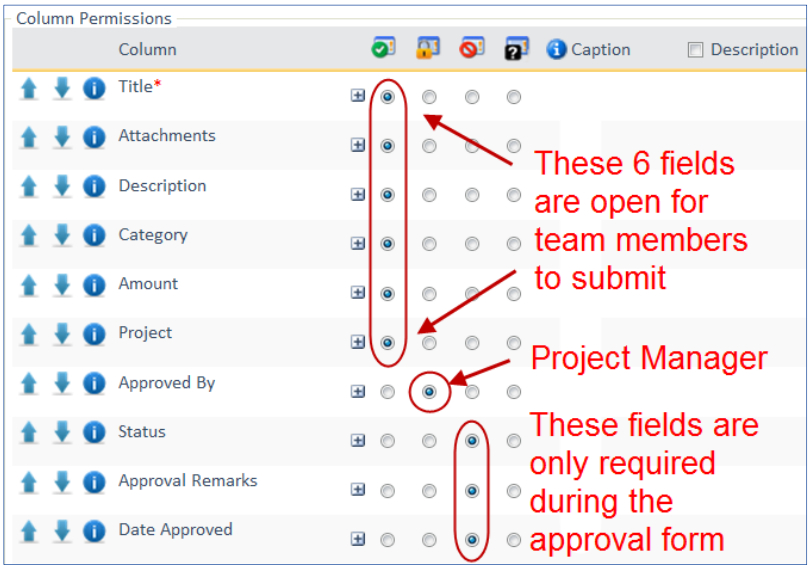


Figure 66 – Setting Permissions for the New Expense Form

Click **Transactions** on left sidebar. Under SmartList definition, click **Expenses**.
Click version 1, then click the **Visual** tab to open the canvas.
Now we will adjust permissions on the **Approval form**.

Click the User icon at the top left of the Approve stage. It will turn yellow.
Mouse over the [me] and click **Edit Role** icon.

A pop-up screen appears: **Role Definition for Approve**.
This screen allows you to select the form you want to change.
Mouse over Edit Form 1 and click the Edit Form icon.
Change the Form Name from "Edit Form 1" to Approve Expense
Then select which columns you want to enable, lock or hide.

Notice the blue arrows to the left of Status column.
Click the blue down arrow to move Status after Approved By.
Find the Project column near the bottom of the list (before Modified).
Click the blue up arrow beside Project 4 times to move Project after Amount and before Approved By.

By default, all fields on the Column list have the blue radio button selected under the green check mark, so all fields are editable when you open this screen. This setting is correct for: Attachments, Status, and Approval Remarks. These should all have the blue dot in the green check mark column. Approvers should be allowed to edit these.

The following field should be locked, so click the circle under the yellow lock column for: Title, Description, Category, Amount, Project, Approved By, and Date Approved. These fields will be visible, but users cannot change them.

The last 4 fields: Modified, Created, Modified By, Created By should all be hidden at the Approve stage. The circle under the red circle slash column is already selected by default for these 4 fields. Click **Save**, then **OK**. Click **Save** for Expenses transaction.

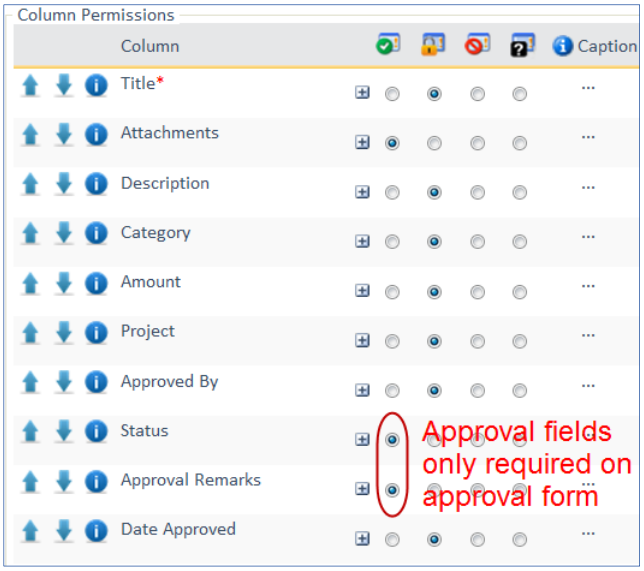
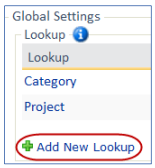


Figure 67 – Setting Permissions for Approve Expense Form

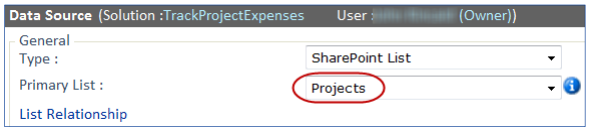
Field Look-up Validations

We need to determine who will approve an expense (based on who is the project manager). We do this by adding a new look-up for this form.



Go to **Definition tab** (not Visual tab) on the **Transactions** screen.
Under Global Settings, click +Add New Lookup.

Figure 68 – Adding a New Lookup



On **Primary List** dropdown, select Projects.
This is the data source for the lookup.

Figure 69 – Selecting Data Source for a Lookup

Click **Save**. Change the name to **Lookup Project**. We will use the **Projects.ID** as the value (key) while the **Projects.Title** is the displayed field. Now, we can specify which column will be using this lookup by clicking +Add Column.

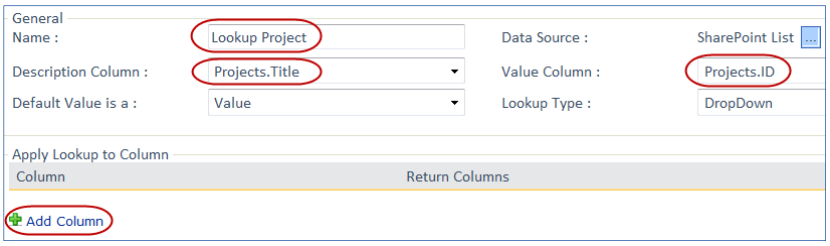


Figure 70 – Naming the Project Lookup

On the **Column** dropdown, select Project (Lookup). Then click the blue options box to assign a default value.

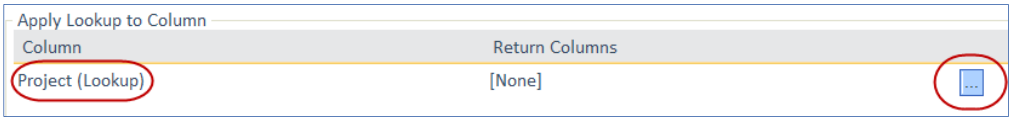
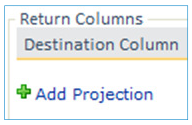
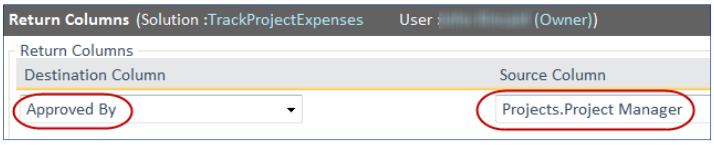


Figure 71 – Applying Lookup to Column



Click +Add Projection to select what field we want to apply for this lookup. In this case, we will default the field Approved By to the Projects.Project Manager.

Figure 72 – Adding Projection



Select **Destination Column** = Approved By
Select **Source Column** = Projects.Project Manager

Figure 73 – Selecting Destination and Source Columns

With this lookup in place, each time someone selects a Project, it will retrieve the project manager and populate the 'Expense.Approved By' field with it.

Save this transaction. Now you are ready to test it out.

1. **Submit** a new claim – On the Home tab, click a project name (use Microsoft World Partner). This displays all the expenses so far on that project.

   Click blue **Actions** dropdown, then click Add new expense claim

   This displays the **Expenses – New Item** form. Notice that you see fewer fields during data entry. Enter some test data: Title = New computer, Description = Need faster machine. On Category dropdown, click Fixed Assets. Amount = 1000, Project = Microsoft World Partner, click OK. The expense is now listed on Home.

2. **Approve** – Click Approval tab. The new expense should appear. Click title New Computer, then click Edit Expense. Notice locked fields; only approval fields are enabled for data entry. Click the Status dropdown, change New to Approved. In Approval remarks, put: I approved this expense. Click OK.

3. **View** the processed transaction. Go to Home tab, click title New Computer, then click View Selected. The status should change to Approved. Click the Workflow Details icon at the top. This displays the animated workflow with audit trails of each activity.

Congratulations, you have just finished building your first Webparts360 application!